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Awareness of, Demand for, and Satisfaction with the West Africa Health Informatics Team (WAHIT) Baseline Report

September 2017

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WITH THE WEST AFRICA HEALTH INFORMATICS
TEAM (WAHIT)
BASELINE REPORT**

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DISCLAIMER

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ACRONYMS

CDC	Centers for Disease Control and Prevention
CoE	Centre of Excellence
DFID	United Kingdom Department for International Development
DHIMS2	District Health Information Management System
DHIS2	District Health Information Software 2
DHMIS	District Health Management Information System
DQA	Data Quality Assessment
E4D	Evidence for Development
ECOWAS	Economic Community of West African States
eLMIS	electronic Logistics Management Information System
FETP	Field Epidemiology Training Program
GHS	Ghana Health Service
HIS	Health Information System
HISP	Health Information Systems Program
HMN	Health Metrics Network
HP+	Health Policy Plus
IDSR	Integrated Disease Surveillance Response
IHRIS	Interconnecting Human Resources Information System
IP	Implementing Partner
KII	Key Informant Interview
M&E	Monitoring and Evaluation
MOH	Ministry of Health
NGO	Nongovernmental Organization
NHMIS	National Health Management Information System
OR	Operational Research
POR	Prospective Operations Research
PPME	Project Planning Monitoring and Evaluation
RMNCH	Reproductive, Maternal, Newborn, and Child Health

STTA	Short-Term Technical Assistance
SOP	Standard Operating Procedure
SOW	Scope of Work
TA	Technical Assistance
TCN	Third Country National
TOR	Terms of Reference
UiO	University of Oslo
USAID	United States Agency for International Development
WAHIT	West Africa Health Informatics Team
WAHO	West African Health Organization
WHO AFRO	World Health Organization Africa Regional Office

EXECUTIVE SUMMARY

Introduction

The health information system (HIS) is a fundamental piece of health infrastructure. A strong HIS provides reliable data to policy makers (governments, development partners, service providers, and communities) to target health interventions, allocate resources, and effectively respond to disease outbreaks. A properly functioning HIS ensures that vital information gets into the right hands when needed, enabling policy makers, health managers, and individual health care providers to make informed choices about everything from patient care to national budgets.

In the past few years, there has been considerable interest by both countries and the donor community in supporting HISs, and the focus has been on supporting existing national HISs as opposed to creating parallel mechanisms. The World Health Organization (WHO), for example, established the Health Metrics Network (HMN) in 2005 to support and improve HISs in developing countries.¹ More recently, there have been efforts to support initiatives in favor of measurement and accountability in health, with a summit on this topic organized in 2015 jointly by the United States Agency for International Development (USAID), WHO, and the World Bank as the international community prepared for the post-Millennium Development Goal (MDG) era.² The Health Information Systems Program (HISP) of the University of Oslo has been involved in HIS reform since the 1990s. They are behind the development of the District Health Information Software 2 (DHIS2) commonly used in many countries in Asia and Africa, including West Africa. In fact, the 2012 Economic Community of West African States (ECOWAS) Health Policy and Strategy proposed the establishment of an HIS Centre of Excellence in the region. Given the role that the West African Health Organization (WAHO) plays in the region, it makes sense for that center to be located within this organization.

The Ebola outbreak demonstrated the need to continue supporting HIS development in West Africa and to improve timely case notification, geographic spread, health service availability, and other relevant health data. The Ebola outbreak also demonstrated the need to rely on a team of health informatics experts from West Africa and/or located there, who are familiar with HIS and the cultural context in that part of the world and who can travel easily to different countries in the region to provide any support needed. Reliance on technical assistance in this field from other parts of the world makes any technical assistance (TA) model less sustainable over the long run. The establishment of the West Africa Health Informatics Team (WAHIT) was envisioned to both complement and supplement any existing health informatics technical assistance activities in the region. WAHIT was designed to do the following:

- Make immediate improvements in national and regional HIS that will help strengthen public health systems
- Build local software engineering capacity to support long-term sustainability of HIS investments in the region

WAHIT was designed to start as a five-person team comprising a technical team leader, a business analyst, and software developers from West Africa. This effort is led by WAHO, with funding from the U.S. Agency for International Development, and technical support from the USAID's Health Policy Plus (HP+) Project. WAHIT was established to provide technical

¹ Poppe, O. 2012. Health Information Systems in West Africa. Department of Informatics. University of Oslo.

² MA4. (2015). The Measurement for Health Measurement and Accountability.

http://www.searo.who.int/entity/health_situation_trends/the-roadmap-for-health-measurement-and-accountability.pdf?ua=1

³ Cenciarelli, O., Pietropaoli S., Carestia M., D'Amico F., Sassolini A., Di Giovanni D., Rea S., Gabbarini V., Tamburrini A., Palombi L., Belleci C., and Gaudio P. (2015). Ebola Virus Disease 2013–2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response. International Journal of Microbiology, Volume 2015 (2015), Article ID 769121, 12 pages.

leadership and support in HIS of ministries of health in ECOWAS countries, with a priority given to Ebola-affected countries: Guinea, Liberia and Sierra Leone.

USAID/WA tasked the West Africa Evidence for Development (E4D) activity to conduct a Prospective Operations Research (POR) for providing research-based evidence on trends in awareness of, demand for, and satisfaction with WAHIT and its services.

POR Study Objectives

The **main goal** of this POR baseline was to set the basis to assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in two Ebola-affected countries (Guinea and Sierra Leone) likely to benefit from WAHIT's TA in the near future, and one Ebola-unaffected country (Ghana) not likely to get that TA during the same time span. This baseline was conducted after WAHO and WAHIT team members visited Guinea and Sierra Leone to discuss WAHIT. No such visit had been paid to Ghana prior to the initiation of the baseline, even though WAHIT members have participated in conferences also attended by Ghana representatives from the country's Ministry of Health (MOH).

Relevant Research Questions for Baseline

Relevant research questions to be answered by the baseline measure of the POR and the focus of this report include the following:

- How aware of WAHIT are relevant MOH personnel?
- Whom do MOH officials trust and prefer to address HIS technical challenges to?
- How do relevant stakeholders outside MOHs perceive WAHIT and this model?
- What are WAHIT's operational strengths, weaknesses, and challenges?
- How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?
- Is the partnership (WAHO, Palladium, and USAID) set up for implementing WAHIT effective?

Methods

This report relied on information from interviews with a purposive sample of 38 key informants. The sample comprised 25 stakeholders in two Ebola-affected countries (16 in Guinea, and nine in Sierra Leone). In addition, the sample included nine stakeholders in Ghana (comparison country). Four interviews were conducted with representatives of the partnership behind WAHIT. The initial list of study participants, proposed by USAID with WAHO and Palladium's concurrence, was longer than the list of individuals finally interviewed and was developed by USAID and approved by WAHO. Modifications to the initial list occurred in response to the implementation reality on the ground, and were discussed and approved by USAID.

USAID/West Africa introduced the study and researchers to study participants. E4D, including its research team, followed up with emails and phone calls to secure interviews. USAID HIS specialists in Guinea and Sierra Leone associated with USAID's Global Development Lab intervened to do the same. During the study design phase, Liberia was also included among the Ebola-affected countries, but prior to initiation of the baseline, USAID's Global Development Lab requested exclusion of Liberia from the study.

Interviews were taped, transcribed, translated to English when needed, and analyzed using a thematic grid developed by randomly selecting three interviews from each country and identifying initial themes. The analysis grid was expanded as additional topics emerged. Data were entered in Atlasti.8 and word clouds were created for two topics: the WAHIT model and WAHO's oversight of WAHIT.

Key Findings

How aware of WAHIT are relevant MOH personnel?

In general, the awareness of WAHIT was limited. Only four of the 25 key informants interviewed in Sierra Leone and Guinea said that they had heard of WAHIT prior to the interview. In those instances, a key informant showed the E4D team a WAHIT brochure left behind during a visit he received to introduce WAHIT. Two others had checked their email/calendar logs prior to the interview searching for the word WAHIT and identified when they were visited for the same purpose, whereas another remembered that a person working for WAHIT paid a visit in conjunction with a well-known partner (e.g., University of Oslo). For the rest, the recollection of WAHIT was either vague or nonexistent.

This issue was not addressed during the Ghana interviews because WAHIT does not plan to operate there during the first year of implementation, even though it may do so in the future were Ghana to request it. Nevertheless, MOH officials interviewed had an appreciable understanding of WAHIT.

Whom do MOH officials trust and prefer to address HIS technical challenges to?

Various donors and partners provide support to efforts carried out by the MOH both in Sierra Leone and Guinea to digitize different subcomponents of their health information system and integrate them under one single platform: DHIS2. Most of these efforts were initiated in 2016 and are currently underway with various levels of maturity. The efforts are intended to obtain, collate, transmit, analyze, and use data that pertain to different domains: service statistics, disease surveillance, supplies, and human resources. Those efforts are to be expanded to include other subsystems such as finance, infrastructure and equipment, laboratory and medical imagery, and research. WAHIT should support the efforts that are underway and find a niche within the mix of TA that is available to countries already to reach the objectives that they have established. Areas of interest from the informatics perspective alone include HIS digital infrastructure, interoperability between systems, easy access to databases for eventual data mining, infrastructure maintenance, and all related training.

Although one MOH official reacted to WAHIT in general by saying “the more the merrier,” this was not a typical reaction. Given the development of strategic plans to improve HIS in both Sierra Leone and Guinea, which are reflected in annual work plans, the preference would be for future TA efforts to be integrated with what is already being implemented.

Does the introduction of WAHIT affect these preferences?

It is not clear yet what type of support WAHIT may provide, and further clarification will be needed. The possibility of providing menu-driven TA was raised for future WAHIT clients to know what to choose from. For some study participants, geographical proximity is a necessary but insufficient condition to accept further TA to digitize HIS. Acquaintance with local conditions and the possibility of applying what is working in similar situations in the region is probably just as important if not more important.

How do relevant stakeholders outside MOHs perceive WAHIT and this model?

A “fly in/fly out” technical assistance model will not be accepted by most study participants and may create more issues than provide answers. Remote technical assistance seemed as a new concept and should be reviewed from the perspective of how much skills transfer it allows. It will be important for the WAHIT team to develop trust, demonstrate its worthiness and have missions that are long enough at the outset to help that process and help resolve any glitches that may result as their recommendations are operationalized and implemented.

What are WAHIT’s operational strengths, weaknesses, and challenges?

To obtain answers to this question, the E4D team needed to present a short description of WAHIT. Answers concerning operational strengths, weaknesses, and challenges may be organized into two categories: 1) how the technical assistance should be provided, and 2) what the focus of that technical assistance should be.

In terms of how the technical assistance should be provided in order to be successful, suggestions made by study participants may be organized around three major areas: (i) integrating efforts into strategies, work plans, and specific actions already occurring on the ground, thus avoiding duplication or competition with other ongoing TA; (ii) transferring competency so MOH staff can resolve issues in the future as they arise; and (iii) adopting an implementation strategy characterized by innovativeness, promptness, and supportiveness, including follow-up measures as needed, coupled with hardware options as required.

Areas where there may be space include the following: (i) developing the HIS architecture and interoperability across subsystems; (ii) helping HIS subsystems that are progressing slowly (e.g., supply chain or routine service statistics) to gain speed and catch up with those that are more advanced (e.g., disease surveillance); (iii) streamlining indicators and related forms to support efficient data collection, transcription and/or transmission; (iv) improving central and local capacity to analyze and use data available provided quality is improved; (v) ensuring maintenance of and updating hardware and software solutions in conjunction with existing TA partners well-entrenched in the countries; and (vi) developing a strategic Human Resource Development Plan and helping implement it. There is a call for evaluating the technical assistance provided to learn from the experience and modify it accordingly to make it more effective.

How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?

Many answers to this question were hypothetical because WAHIT TA is currently an abstract concept. Therefore, it was difficult for participants to speak about the implications of having WAHIT be part of WAHO or under WAHO's umbrella, based on concrete experience. Regardless, the approach is generally accepted because, institutional affiliation aside, study participants have a positive opinion of WAHO. In fact, study participants from the public sector have visited WAHO or have participated in events organized by WAHO and are thus familiar with how the organization operates. However, Sierra Leone and Guinea participants argued in favor of WAHO making WAHIT a more permanent service and not connected to a specific project because when projects come to an end and funding dries up, so do services. They argued that the service should also be expanded to other countries beyond Ebola-affected countries, as already planned, to further guarantee long-term survival. One Sierra Leone participant argued in favor of exploring fee-for-services options as a mechanism that may contribute to sustainability. Others argued in favor of having WAHIT experts be absorbed by WAHO and included in WAHO's operational budget. Study participants argued that WAHO representatives/designated contact persons in each ECOWAS country could become conduits for the expansion of WAHIT services. In the view of study participants, time responsiveness will be crucial and bureaucratic procedures should be streamlined to avoid delays. In the view of the E4D team, WAHIT should use WAHO-planned events as well as other opportunities and platforms such as existing technical working groups in countries to introduce WAHIT, develop the needed contacts, develop trust with potential clients, and create a network that may lead to responsive TA missions.

Is the partnership set up for implementing WAHIT effective? (WAHO, Palladium, and USAID)

For study participants, it could be effective because different strengths offered by partners are put together in the context of the partnership: The Global Development Lab drives digital TA considerations, WAHO has regional presence and recognition, and Palladium has the technical expertise to satisfy country needs. Countries currently benefit from in-country TA with supporting partners on the ground. In addition, a regional hub would help reduce redundancies and duplication.

The study also explored operational challenges that the WAHIT project has experienced since it was implemented. This information was collected from USAID (Washington and West Africa Mission) as well as WAHO and Palladium

representatives. The difficulties pointed out by these study participants are associated with four major areas: (i) defining WAHIT's team composition and expertise; (ii) WAHO's involvement in hiring/onboarding WAHIT team experts; (iii) placing WAHIT experts within WAHO's structure and geographical location from where they should operate; and (iv) determining which countries can benefit from WAHIT's TA if a phased rollout approach is adopted. Different perspectives need to be reconciled quickly as well as the differences in standard operating procedures between participating partnership organizations.

CONCLUSION AND RECOMMENDATIONS

Overall Recommendation

The WAHIT TA approach may end with remote and virtual technical assistance, but the starting point will require building relationships and trust on the ground. WAHIT will be considered as the “new kid on the block,” and to be accepted it will need to explain and demonstrate to different stakeholders why the TA that it offers is valuable and responsive to country needs and plans.

Specific Recommendations

- Use multiple avenues to inform different stakeholders of what WAHIT is, what it can do, and how countries can tap into the technical assistance the team may provide. This could include meetings that WAHO has already scheduled in the coming months. Introductory visits to countries need to be complemented with other marketing activities including presentations in already-scheduled meetings that bring together country representatives at the regional level in the next quarter. WAHO can also consider how to rely on the WAHO representatives in the targeted countries to further expand awareness about WAHIT’s existence and role.
- Have WAHIT experts join regular meetings of technical working groups already operating in targeted countries as well other existing platforms where other TA partners and government officials discuss issues to tackle and make strategic, tactical, and implementation decisions, and assign roles and responsibilities pertaining to health informatics. This involvement will help the WAHIT team become part of the group of professionals supporting health informatics, become acquainted with what is being implemented on the ground, and in so doing identify opportunities for support in which they specialize.
- As TA opportunities get identified, consider providing support at not only the central level, but also at the provincial and even district level, if needed. Consideration may be given to pilot districts where support may be provided and serve as a training ground for additional district-level support.
- Draft scopes of work may be developed between WAHIT experts and MOH officials prior to submission of official requests to WAHO for processing.
- Define opportunities and mechanisms to develop trust among TA recipients. Placing WAHIT within WAHO opens doors but does not guarantee trust and reliance on the WAHIT TA from the outset.
- Once the technical area of support is identified, one way to organize the WAHIT TA is to start with a short-term TA visit on the ground, followed by intermittent visits as needed. Provide remote assistance to ensure smooth implementation of recommendations and know-how transfer.
- Different perspectives need to be reconciled quickly and the differences in standard operating procedures between participating partnership organizations must be identified early in the process to anticipate solutions and avoid implementation delays.

BACKGROUND

The health information system (HIS) is a foundational piece of health infrastructure. A strong HIS provides reliable data to policy makers (governments, development partners, service providers, and communities) for targeting health interventions, allocating resources, and effectively responding to disease outbreaks. A properly functioning HIS ensures that vital information gets into the right hands when needed, enabling policy makers, health managers, and individual health care providers to make informed choices about everything from patient care to national budgets. However, in West Africa, HISs are weak and face several challenges, including poor governance and accountability. Furthermore, the HISs are underutilized and incomplete with regard to information on health service availability, infection control options, case notification, geographic spread, and relevant animal health data.

The 2014–2015 Ebola outbreak in West Africa exposed severe weaknesses in regional HISs. The outbreak went unnoticed during its initial weeks until the first serious symptomatology and deaths appeared, and it eventually infected nearly 28,000 individuals and claimed 11,310 lives.^{3,4} Local responders lacked critical information such as case notification, transmission rates, geographic spread, and health service availability needed to monitor and manage the situation comprehensively and in real time. If this information had been readily available, large-scale human and economic losses could have been avoided. Furthermore, as Ebola erupted across West Africa, a weak communications infrastructure and the lack of a two-way real-time disease data collection and analysis system hampered the ability of health care workers to respond to the crisis.

Against this backdrop, national governments, regional institutions, and international organizations aim to set up a strong HIS across the West Africa region. During the 2015 Annual Meeting of National HIS Managers in Accra hosted by the West African Health Organization (WAHO) and the United States Agency for International Development (USAID), all 15 members of the Economic Community of West African States (ECOWAS) recognized a lack of technical capacity to maintain and adapt critical digital health platforms as a contributing factor for challenges faced during the national response to Ebola in West Africa. They also affirmed that reliance on external support jeopardizes the successful implementation of digital tools for health and can be a critical impediment to further progress in public health systems development. Therefore, USAID, in partnership with other key players, opted to support WAHO in building a West Africa Health Informatics Team (WAHIT) that will serve to fill this gap by acting as a regional resource to provide technical support to national Ministries of Health (MOHs) for HIS improvements.

In parallel, USAID/WA tasked the West Africa Evidence for Development activity with conducting a Prospective Operations Research (POR) for providing research-based evidence on trends in awareness of, demand for, and satisfaction with WAHIT and its services in three countries (Guinea, Sierra Leone, and Ghana).⁵ The target audiences for this research are USAID including the Africa Bureau, the Global Development Lab Team supporting Ebola activities, and the West Africa Regional Mission; the West African Health Organization (WAHO); the Ministries of Health (MOH) in the three countries; Palladium (HP+), their donors and local partners in health and in other sectors using the health information system (HIS).

³ Cenciarelli, O., Pietropaoli S., Carestia M., D'Amico F., Sassolini A., Di Giovanni D., Rea S., Gabbarini V., Tamburrini A., Palombi L., Belleci C., and Gaudio P. (2015). Ebola Virus Disease 2013–2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response. *International Journal of Microbiology*, Volume 2015 (2015), Article ID 769121, 12 pages.

⁴ World Health Organization. (2016). Ebola Data and Statistics. <http://apps.who.int/gho/data/node.ebola-sitrep.quick-downloads?lang=en>.

⁵ Liberia was expected to be included in this assignment, but it was subsequently dropped at the request of the USAID Global Development Lab.

STUDY GOALS AND OBJECTIVES

The **main goal** of the E4D's Prospective Operations Research (POR) is to assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and one Ebola-unaffected (*nonintervention*) country (Ghana).

The POR has the following **primary objectives**:

1. To identify *factors* influencing the Ministry of Health's decisions to engage WAHIT technical support (versus the support of alternative service providers)
2. To assess satisfaction with WAHIT services, and to generate data to inform program adaptation
3. To identify *challenges* and *barriers* faced by health stakeholders (health workers and MOH officials) in adopting and managing the WAHIT model

Research Questions

The POR aims to answer the following research questions:

1. How aware of WAHIT are relevant MOH personnel? How does awareness change over the project life cycle?
2. What level of demand is there for WAHIT services? Is demand sufficient to justify the model's continuation? How will demand change over time as WAHIT establishes itself?⁶
3. Whom do MOH officials trust and prefer to address HIS technical challenges to? Does the introduction of WAHIT affect these preferences?
4. How do relevant stakeholders outside MOHs perceive WAHIT and this model?
5. How is/isn't WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?⁷
6. What are WAHIT's operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?⁸
7. How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?
8. Is the partnership set up for implementing WAHIT effective (WAHO, Palladium, and USAID)?

⁶ This question is not addressed by the baseline.

⁷ *Ibid.*

⁸ The baseline addressed only the first part of the question.

Description of WAHIT

WAHIT is a product resulting of the partnership of USAID with other key players to support WAHO that will serve as a regional resource to provide technical support for HIS improvements.

The overall goal of WAHIT is to provide HIS technical leadership and support to Ministries of Health (MOHs) within the Economic Community of West African States (ECOWAS), with an initial focus on the Ebola-affected countries of Guinea, Liberia, and Sierra Leone.

The specific objectives of WAHIT are as follows:

1. Set up a regional team of experts (software developers, business analyst, and team lead) to make immediate technical improvements in the national and regional digital HIS that will help strengthen public health systems. These investments—from linking separate systems to automating reporting to building dashboards—can help improve health outcomes for some of Africa’s most vulnerable populations as the region recovers from the most devastating Ebola outbreak in history.
2. Build local software developer capacity to support long-term sustainability of HIS investments in the region. During the first year of the team’s deployment, USAID and partners can test innovative models for providing sustainable software development support to the public sector, with the potential to spark transformative technology-driven approaches for development in some of the world’s most resource-constrained countries.
3. Support a strategic recommendation from the 2012 ECOWAS Health Policy and Strategic Plan to establish a regional HIS Center of Excellence (CoE).

To achieve these objectives, WAHIT was designed to assist the MOHs in the host countries with fixing, adapting, and maintaining their HIS.

Illustrative activities include the following:

- Integrating a separate District Health Information Software (DHIS2) component for malaria reporting into the national DHIS2 platform
- Creating a Reproductive, Maternal, Newborn, and Child Health (RMNCH) dashboard based on existing indicators
- Integrating the newly approved Tuberculosis Form into the national DHIS2 platform
- Automating the reporting of the National Health Management Information System (NHMIS) data into WAHO’s DHIS2 platform
- Continuing training of District Monitoring and Evaluation (M&E) officers for data entry and reporting quality

The first year of the activity is meant to serve as a proof-of-concept for a sustainable WAHIT as part of a broader regional CoE for health informatics. The activity started in September 2016 (with the pilot phase ending in December 2017), with the flexibility to continue into 2018. WAHO is implementing the WAHIT project with the support of USAID and Palladium.

Within the *first year of operation*, WAHIT is tasked with the following:

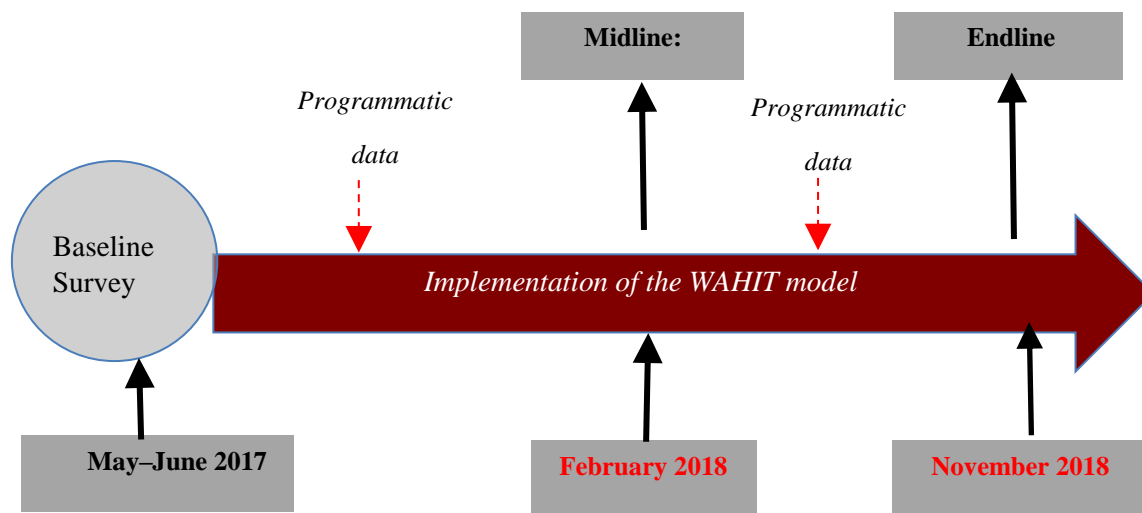
- Establishing standard operating procedures (SOP) for providing support to MOHs
- Providing technical support to improve national HIS platforms based on criteria agreed upon by WAHO and USAID
- Documenting and establishing best practices for regional digital health support to MOHs; technical assistance provided by this team will also seek to accelerate HIS interoperability in the region
- Conducting a viability assessment to inform the business case for whether a fuller and long-term regional WAHIT should be launched with a sustainable model for recruitment and training, and whether/ how to link to the proposed WAHO Centre of Excellence (if so, the assessment will also identify significant factors influencing program success and recommendations for implementation and sustainability)

METHODOLOGY

Study Design

The prospective operations research study used a quasi-experimental prospective design. It is being implemented in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and one Ebola-unaffected (*nonintervention*) country (Ghana). The process includes three measurements. Figure 1 presents the study timeline and it serves to place the baseline in context

Figure 1: Proposed Timeline of the WAHIT Intervention and Prospective Operations Research



The E4D team conducted the baseline before the commencement of WAHIT services implementation (May 2017), with the understanding that scoping visits have already been completed in Guinea and Sierra Leone.⁹ The baseline survey assessed factors, perceptions, and intentions to use the WAHIT model. The midline and endline surveys will allow for an assessment of the changes that occurred since the baseline survey.

Sampling Strategy

This study used data from a purposive sample of 38 key informants, among them 25 from two Ebola-affected countries, Guinea (n=16) and Sierra Leone (n=9), and nine from Ghana, which was included in the study as a comparison country. Participants comprised four representatives of the partnership behind WAHIT (2 from USAID, 1 from WAHO and 1 from Palladium). The initial list of study participants, proposed by USAID with WAHO and Palladium's concurrence, was longer than the list of individuals finally interviewed. Modifications to the initial list occurred in response to the implementation reality on the ground, and were discussed and approved by USAID.

USAID/West Africa introduced the study and researchers to study participants. The E4D research team followed up with emails and phone calls to secure interviews. USAID HIS specialists in Guinea and Sierra Leone associated with USAID's Global Development Lab intervened to do the same. During the study design phase, Liberia was also included as an Ebola country, but prior to initiation of the baseline, it was excluded from the study at the request of USAID/Global Development Lab.

⁹ The final report will emphasize that as a result, Guinea and Sierra Leone are expected to have a greater awareness of WAHIT at baseline.

A list of study participants at the baseline may be found in Annex 2. It is broken down by location, institutional affiliation and role.

Data Collection

Data collection occurred during May and June 2017 in Guinea and Sierra Leone, and in July through September 2017 in Ghana. The exercise occurred when WAHIT TA had not yet responded to any specific requests from participating countries because the WAHIT team was not fully on board, and the team is expected to start operating October 1, 2017. The data were mainly collected through face-to-face interviews, and only in exceptional cases, the research team conducted interviews over the phone via Skype or teleconferencing.

The study Team Leader and a Subject Matter Expert involved in this study conducted the baseline in Guinea and Sierra Leone, and a Research Assistant conducted the baseline interviews in Ghana.

Data Collection Instruments

The E4D Research Team constructed a matrix reflecting (i) the research questions; (ii) the corresponding field questions to be included in the data collection tools; and (iii) the study participants who would provide information. There are four categories of study participants: (1) MOH staff, (2) implementing partner (IP) staff and international organizations (UNICEF and WHO), (3) WAHO and Palladium, and (4) USAID. This matrix also indicates which questions need to be used at the different measuring points (baseline, midline, and endline). This separation is important because many of the questions concerning perceptions about the WAHIT technical assistance provided pertain only to the midline and endline. In addition, WAHO, Palladium, and USAID are not technical assistant recipients and should not be asked questions pertaining to the quality of assistance received. The numbering of questions in the different versions of the instruments remain the same for easy question identification when discussing instruments. The matrix constructed appears in Annex 3 and the instruments used in the study may be found in Annex 4.

Data Analysis

Interviews were taped, transcribed, translated to English when needed, and analyzed using a thematic grid developed by randomly selecting three interviews from each country and identifying initial themes. The analysis grid was expanded as additional topics emerged. Data were entered in Atlasti.8 and word clouds were created for two topics: the WAHIT model and WAHO's oversight of WAHIT.

The transcription of Key Informant Interviews (KIIs) began immediately after the interview. To complete the data analysis the following actions were performed:

- Developing the grid by doing an initial identification of themes in three randomly selected interviews from each country
- Creating word clouds for two topics: the WAHIT model and WAHO's oversight of WAHIT
- Expanding the topics in the analysis grid as additional topics emerged
- Using verbatim remarks and having sentences as the unit of analysis
- Grouping results by key areas of interest
- Identifying different positions in relation to each important topic
- Summarizing each position and assessing its strength or degree of importance

Ethical Considerations

Measures were taken to protect the rights of human subjects who participate in the study and to adhere to the ethical principles of respect, beneficence, and justice as defined by The National Commission for the Protection of Human Subjects

of Biomedical and Behavioral Research.¹⁰ E4D submitted the study protocol to USAID/WA for approval. The interview guide included a consent sentence recognizing the participant's right to refuse the interview before and/or during the research. All participants agreed to have their interview recorded, and recordings were shared with those who requested them.

MAJOR FINDINGS

The major findings of this research vary according to countries depending on the level of the development of their HIS and the various historical challenges that these health systems have faced.

Profile of Study Participants

The respondent profile that emerged through analysis is that the MOH officials interviewed were involved in strategic planning; M&E design, implementation, and support; service statistics and disease surveillance; pharmaceutical supplies; and human resources. MOH officials are for the most part managers of different functions; they do not necessarily play a digital technical role, and rely on MOH staff or IP experts to do so. IP personnel interviewed play managerial or technical roles may be physicians but also come from different fields including public health and informatics.

The Health Information System

The WAHIT model aims to build sustainable regional technical assistance capacity to strengthen national health information systems, relying on experts that come from the West Africa region. This section highlights key characteristics of the national HIS from the three selected countries. Findings show similarities between Sierra Leone and Guinea, and particularity of the Ghana systems. Given these differences, Guinea and Sierra Leone are discussed together, and Ghana is discussed separately.

In Guinea and Sierra Leone, HIS include two major subcomponents: (1) the routine reporting of health services, and (2) epidemiological surveillance. Depending on the country and the stage of development, HIS might also include (1) human resources, (2) supplies, (3) financing, (4) infrastructure and equipment, (5) laboratory and medical imagery, and (6) research. The District Health Information Software 2 (DHIS2) is the backbone for the reporting and management of HIS in the three countries.

Guinea and Sierra Leone are making efforts to fully converge toward the platform. They have elaborate five-year strategic plans to support their HIS development. The Guinea 2016–2020 Strategic HIS Plan indicates the following:

“In a near future, all the subsystems must be digitized and interoperable as part of the implementation of DHIS2 throughout the country.”¹¹

Overall, study participants from the public, nongovernmental organizations (NGOs), and donor communities expressed their concern with meeting the following three criteria as the subsystems become fully digitized: accuracy, completeness, and promptness. All of these elements make up quality, even though in some instances other dimensions of quality also include pertinence, specificity, and coherence. The strategic HIS plan for Guinea also addresses the need to set up a system to verify data quality in general. For example, the routine data may be validated with surveys. Although not expressed in such terms, a data quality assessment (DQA) approach seems to be needed. Yet, the concerns do not stop there—they also include the

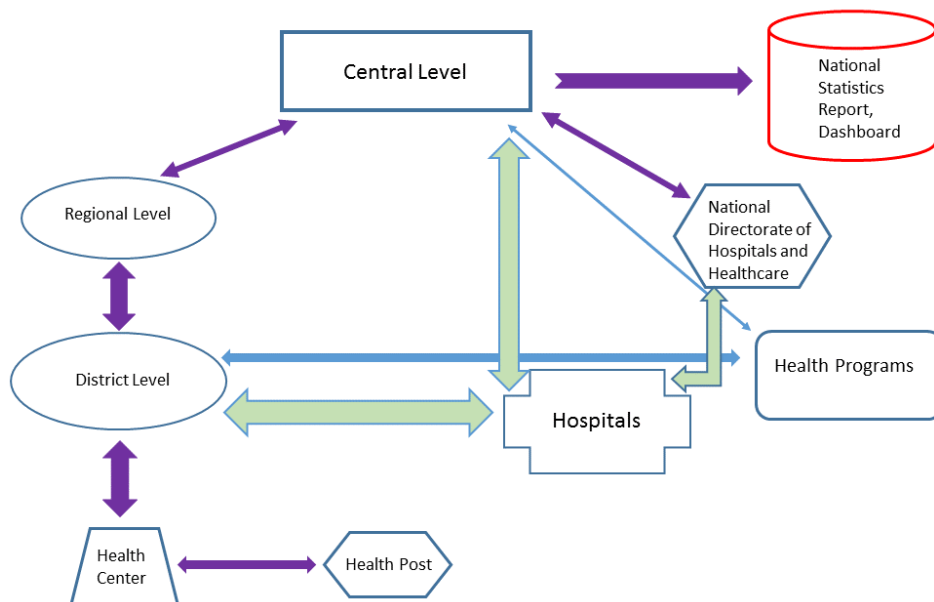
¹⁰ National Institutes for Health. (1979) *Regulations and Ethical Guidelines: The Belmont Report Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, Retrieved December 7, 2012, from: The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research: <http://www.biola.edu/offices/clear/media/downloads/BelmontReport2.pdf>.

¹¹ Bureau de Stratégie et de Développement, (2016). Plan Stratégique de Renforcement du Système National d'Information pour la Gestion Sanitaire (SNIS) 2016–2020. Ministère de la Santé.

need for skills to analyze the data, disseminate results, and use the findings properly for decision-making purposes down to the district level.

Figure 2 below diagrams the flow of information from data collection to a dashboard in Guinea.

Figure 2: Diagram of Information Flow in Guinea’s HIS¹²



However, Ghana’s digital HIS is one of the most advanced in West Africa and is deployed across all districts in Ghana in both government and private health facilities. The country uses the District Health Information Management System (DHIMS2) for the reporting and management of HIS. Information from DHIMS2 largely satisfies the needs of most key informants even though a few complement it with data from the Demographic and Health Surveys and the Multiple Indicator Cluster Survey in case there are gaps. Ghana has the technical capacity to manage its HIS and therefore prefers to look inward for technical assistance. Nevertheless, the Ghana Health Service (GHS) collaborates with several Implementing Partners (IPs) that receive funding and technical assistance from various agencies and donors such as the Centers for Disease Control and Prevention (CDC), Global Fund, USAID, Population Council, Measure Evaluation, and University of Oslo. These organizations provide assistance for the implementation of various HIS-related projects. Population Council has been providing technical assistance to the Ghana HIS since 2004 through the Community-Based Health Planning and Services project. Other projects such as e-Tracker and Grameen have been providing TA to the Ghana Health Service on HIS. The following quote lists the different partners present in Ghana.

“Population Council also is supporting the Ghana Health Service with [District Health Information Management System] (DHIMS), whereas CDC is providing funding. Grameen was doing something with maternal health but the project ended. I don’t know what has become of that, but in the past Grameen was supporting. We have USAID supporting us through Measure Evaluation. We have CDC—they are [not] supporting us

¹² The thickness of the arrows reflects the volume of data flowing; the purple color reflects the main channel for data flow; the green color shows supplementary data flows associated with hospitals; and the light blue serves to illustrate additional direct connections between components of the system.

but they are working with us, they understand what we are telling them. The Global Fund is supporting us wholly and fully. They understand what we are doing. . . . USAID is supporting the Ghana government on DHIMS digitization. Apart from that, there is also this project called e-Tracker.”

Common Challenges: Prioritized HIS Challenges and Challenges Affecting the Conversion to a Digital HIS

At the strategic level, countries face challenges in using the HIS. For example, here is a brief description of the challenges faced by the Guinea Strategic Plan listed in priority order:

- Policy, planning, and resources
There is no general framework to guide the involvement of the public and private sectors for HIS purposes and to fully implement HIS M&E at all government levels, including at the district level. In addition, some participants in Guinea indicated that the intervention-planning process might not always consider data collected and/or findings of some surveys carried out. In addition, participants in both Guinea and Sierra Leone suggested that these countries have insufficient financial resources, equipment, and personnel with needed qualifications to address the HIS needs in each country. Guinea study participants expressed the need for a human resource development plan and a plan to maintain the computer stock.
- Tracking indicators and information sources
The challenges associated with data collection and analysis include the following: multiplicity of non-harmonized reporting systems at all levels; lack of standardized definitions of indicators tracked; untimely operation of primary sources and use of data collection tools; incomplete health and civil registration data; little or no data from the private sector, research institutions, the public sector, and parastatals; and inadequate data collection at the community level.
- Data management
There are no clear guidelines regarding data collection, transmission, treatment, analysis, interpretation, and presentation. In addition, inconsistent data quality contributes to bottlenecks.
- Data dissemination and use
Reports are produced slowly. The MOH website does not contain all relevant documents, and it is not visited by potential users.
- Institutional framework and coordination of health research
There are insufficient regulations pertaining to health research, and little collaboration among concerned units within the MOH.

Study participants in Guinea and Sierra Leone reported many challenges as the countries try to digitize their information subsystems. Some of the points mentioned above are at the strategic plan level, yet not all are taken up in the interviews conducted. If they are replicated, the comments may be presented slightly differently. They may be categorized into the typology presented in the table below. The table includes the type of challenge and a description of that challenge, plus some quotes to bring the definition to life. The table is organized as a progressive scale, starting with the HIS design and subsystem integration and operability, moving to infrastructure and equipment that can make the system operable on the ground, and then presenting issues concerning human resources, data and data analysis and its use for decision-making.

Even though WAHIT will not address infrastructure, equipment, and hardware issues, the challenges presented will give a backdrop of the context in which technical assistance will operate.

Table 2 – Typology of Generally Mentioned Challenges to Digitizing HIS in Guinea and Sierra Leone

Type of Challenge	Challenge Description and Some Illustrative Quotes
HIS architecture	<p>Health information systems architecture covers hardware and software requirements for HIS to operate and standards for interoperable communication.</p> <ul style="list-style-type: none"> o “One of the important issues in Guinea is that there is no architecture for a digitized health information system. There is no clarity on how to develop a digitized HIS. . . . One of the issues detected is the management of servers.” (Guinea)
Integration and interoperability	<p>Integration refers to bringing the different HIS subsystems together, and interoperability refers to the possibility of making data from different subsystems capable of being analyzed together. Currently various subsystems exist with different and standalone databases that are analyzed separately. This fragmentation increases the number of forms to be completed in each health facility, with workloads increased by the collection of duplicate information.</p> <ul style="list-style-type: none"> o “We have to limit or eliminate fragmentation. Surveillance data improved with the arrival of Ebola and the level of involvement of community health workers. Ebola brought together three different ministerial departments (health, environment, and animal resources) to the benefit of health and putting that information together under ONE HEALTH. This is what should be done now.” (Guinea) o “The HIS in Guinea is too fragmented. The management focus is on morbidity only and all other aspects such as human and financial resources are managed elsewhere. In a recent meeting, one point of discussion was to put everything together to create a national holistic system.” (Guinea) o Windev is a database used only by the malaria program, but other programs have their own databases and the use of separate databases is being reinforced. We will have all that information as part of the DHIS2 so all programs use it. The first wave of database managers has been trained already. We will integrate all these subsystems little by little. (Guinea) o “[Sub]systems can be connected with each other and can share data, a very clear interoperable between iHRIS and DHIS2. [For example,] we have health workers in iHRIS and we have facility delivery stats in DHIS2, and when these systems are made interoperable someone could run a query, someone could see there are 40 midwives in one clinic and zero midwives in another clinic, and see that more women are dying in childbirth in the other clinic . . . so someone could take data from service delivery and health workforce data and see that data in one screen to make decisions about moving people or changing services provided.” (Sierra Leone)
Infrastructure, electronic services, and equipment access and maintenance	<p>Infrastructure/electronic services in this case refer to electricity, internet connectivity, and phone coverage, whereas equipment includes tablets and computers. Illustrative quotes from different study participants follow.</p> <ul style="list-style-type: none"> ● Electricity and internet connectivity: <ul style="list-style-type: none"> o “Electricity is not very common here either. There is a small grid in Freetown and it is inconsistent; some areas [use] hydropower, but when it rains it doesn’t work. We hear all the time, ‘I was unable to charge the device, I was not able to connect, I have no lights to finish the report when I go home,’ I think this is a huge challenge.” (Sierra Leone) o “There are power issues, power outages for long periods, backup storage is not very reliable, and so you could lose information.” o “I want to [point out that] one issue that isn’t being addressed is the connectivity issue—creating these systems without working to provide a solid internet connect is like giving them cars but no roads. There is no internet and no electricity.” (Sierra Leone) o “We are going digital, but this requires access to the internet and a challenge that ensues is permanent power shortages.” (Guinea)

	<ul style="list-style-type: none"> ○ “Connectivity is a big challenge. Some facilities do not have any phone coverage; some facilities do not have any power. To digitize that is a key challenge.” (Sierra Leone) ○ “We can provide solar chargers, but if there is no network in a village, we cannot put up a phone tower. [You] need to go to the next village or ride a bike for data submission.” (Sierra Leone) ● Phone coverage: <ul style="list-style-type: none"> ○ “They have to submit the data by phone and some people have to walk to a location to find coverage.” (Guinea) ● Equipment Access and Maintenance: <ul style="list-style-type: none"> ○ “We are using tablets to collect and transmit data. At the moment we are doing it only in one of the 14 districts.” (Sierra Leone) ○ “You cannot just have a technical solution and expect that will be adopted. It is equally important and if not even more so to have maintenance and support as part of implementation.” (Sierra Leone). ● Even though Ghana’s HIS is advanced, there are some challenges that persist, especially with data capture at the facility where hardware and internet challenges persist. This was one of the areas the GHS needed support with, especially with the implementation of the e-tracker, which is simply the “DHIMS on a tablet” and is meant to support data capture at the facility level.
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Type of Challenge	Challenge Description and Some Illustrative Quotes
Human resource needs	<p>These challenges have both quantity and staff qualification implications. On the quantity side, an argument submitted is that governments have an insufficient number of staff to collect, enter, and/or transmit data. Concerns about staff qualifications are different in nature and range from technology use to data analysis and use. Study participants also added concerns about the mobility of staff once they are trained.</p> <ul style="list-style-type: none"> • Staff quantity: <ul style="list-style-type: none"> ○ “People doing this work at the district level are . . . not all proficient. . . . [T]here is a shortage of staff where we only have one staff member per health facility and that person has to do everything.” (Sierra Leone) • Staff qualifications: <ul style="list-style-type: none"> ○ “I’m going to start with the skill set of the local staff—their education has been hindered between the civil war and Ebola, and finding qualified people who can do electronic systems and web development work is not easy.” (Sierra Leone) ○ “The technical health agents at the health centers often do not have skills to use computers and [so they] continue to fill out paper forms.” (Sierra Leone) ○ “The qualification of staff that works in the HIS is a challenge as they do not have the skills needed, especially to analyze data.” (Guinea) ○ “Although data can be mined, ‘the production of tables, graphs, and maps, I must confess, [poses] a problem of staff qualifications. We do not have anything else, and we have to do with what we have.’” (Guinea) • Mobility/attrition of trained staff: <ul style="list-style-type: none"> ○ “There is [also] the problem of staff mobility among those trained. With Ebola, there were many people trained but they were not kept by the MOH . . . There are new recruits and those have to be trained again.” (Guinea)
Volume of indicators and data collected	<p>The more indicators that are tracked, the more data are needed. This requires more forms and additional time to collect, transmit, and analyze the data.</p> <ul style="list-style-type: none"> ○ “We are testing bringing together the four programs of the MOH and we will try to integrate around 530 indicators to the DHIS2.” (Guinea) ○ “There is a ridiculous number of hours used for form filling; it was two hours a day filling out forms. On the side of the digital system, these paper forms at the health facilities are transmitted to the district, 8 forms per facility, 100 facilities per district, which all go to the same officer and if he’s lucky [he has] a data entry person [to] enter all the forms. Many transcription errors occurred, and they don’t even notice anomalies.” ○ Data from the facility to the district have errors.

Type of Challenge	Challenge Description and Some Illustrative Quotes
“Catching up” when different data information systems are in place	<p>The different subsystems of the HIS are not at the same level of maturity and progress. In addition, there are paper-based systems that are still operational and compete with the digitized approach. Some of them must play catch-up and meet the progress made in those that are more advanced.</p> <ul style="list-style-type: none"> ○ “iHRIS focuses on recruitment and training; it is about careers. There is a standardized form covering different aspects to provide a portrait of staff. Until recently it was all done on paper, but not too long ago we [went] digital. We are still in the deployment phase in three regions—in others data collection is done, data entry is being done, and analysis will be a subsequent step.” (Guinea) ○ “The MOH is digitizing eLMIS (electronic Logistics Management Information System) with support from [Management Services for Health, John Snow International], and others. There is also an effort focused on using data, and logistical information is used at the health centers for planning purposes. We are trying to get the data to reach the central level. Data on HIV/AIDS, malaria, and family planning are a priority and are integrated already into the DHIS2. Data are already coming up to the central level and we have 50% level of completeness.” (Guinea) ○ “I do not [shout from the rooftops] what we have achieved, but we have a number of years doing this and at the district level we have acquired an automatic reflex ... they use Excel ... the data are transmitted via email and are entered into a database and on the 15th of the month are analyzed using Windev.” (Guinea) ○ “In the National Malaria Program, with our system we are covering 100% of the districts, whereas with DHIS2 they are still at 30%.” (Guinea)
Strengthening evidence-based decision-making culture	<p>Data should not only be collected, analyzed, and disseminated but they should also be integrated into the decision-making process.</p> <ul style="list-style-type: none"> ○ “Creating a culture of data demand, I have seen in many countries how data is not used to make decisions, and it builds these systems and they may not necessarily use them the way we have been trained to use them. Big data is just really beginning; the ability to analyze and act on it, and use it to inform decisions and collect more data—that is not the way most of these ministries operate.” (Sierra Leone)

Although Ghana’s HIS is advanced, there are some challenges that persist, including issues associated with lack of commitment for implementing planned activities from different levels of the administrative hierarchy in the health sector, the existence of specific institutional agendas among some implementing partners beyond their support mandates, and limitations caused by poor internet connectivity and equipment. The following quotes discuss these issues:

“If we can get the national, regional, district, and facility [administrators] to commit to doing what they are supposed to do, we shouldn’t have any challenges.”

“Some partners keep distracting country systems. I have worked with them before so I know what I am talking about. They keep distracting country systems by introducing things that are either already available rather than supporting country systems to grow; they try to introduce other systems [because] the moment the funding gets stopped it will collapse. We have been able to put our feet on the ground to dictate the pace even though sometimes we are seen as troublemakers.

“A study has been conducted by the GHS to look at availability of internet for uploading the data. A few districts were recognized as having no internet connectivity, no matter, not even one [single district]. Some have internet connectivity but it’s too [inefficient]. You will spend the whole [time] just trying to send data. So that internet is critical. How fast our internet is. But when they went around it, there is an offline model that they can use to

enter data, and once they get to a place that has internet, they just key it offline, once there is internet they just click and upload. But the key challenge is internet because it has an effect on the timeliness and completeness of data. That's critical. Apart from that, again we are talking about equipment—basic computers, tablets.”

This was one of the areas the GHS needed support especially with the implementation of the e-tracker, which is simply the “DHIMS on a tablet” to support data capture at the facility level.

Actions Undertaken to Meet Challenges

To set the tone, a quote from a study participant who had a big-picture perspective in Sierra Leone regarding efforts supporting health informatics in that country is in order. He said the following:

“There are a lot of donors here . . . [United Kingdom Department for International Development (DFID)], Global Fund, World Bank, WHO . . . Sierra Leone has the biggest investment compared to the size of the country in health informatics. WHO and UNICEF are big UN agencies working in Health Informatics, DFID, [the Japanese International Cooperation Agency], USAID, World Bank. A lot. I was impressed when I first came here. International and local NGOs [were also] impressed. For instance, the Global Fund wants to introduce the patient tracker available from DHIS2, whereas WHO is currently working on cleaning up the master facility lists to introduce DHIS2 and RMNCH scorecards, dashboard, and trackers, and Digital Health Atlas, which is the archive of the mobile data collection initiatives and projects in the country. The World Bank has also put a lot of resources in data use, DFID has a support team to support the mobile DHIS2 rollout, USAID supports eHealth coordination hub project with the rollout of Rapid and Mero (two tools), and the CDC together with eHealth Africa are rolling [out] this IDSR response.”

As part of his extended response, he added:

“There is an M&E Technical Group led by the government. In terms of health informatics and digital health, a new structure called eHealth Coordination Hub has just been established to coordinate these different initiatives and projects to ensure limited or no duplication and that things are being regulated. The government is engaged in promoting the use of digital tools for data and there is [still some] duplication, but the government is working hard to reduce [that].” (Sierra Leone)

The following table summarizes illustrative actions undertaken by governments to meet challenges pointed out in the previous section. The similar challenge categories and actions implemented are listed for each category.

Table 3 – Types of Challenges and Illustrative Actions Undertaken by Countries to Address Them

Type of Challenge	Illustrative Actions Undertaken
HIS architecture	The interviews did not address this topic in unprompted discussions about actions undertaken to address challenges. However, one study participant in Guinea clearly highlighted its absence.
Integration and interoperability	Actions pending, yet there are initial and preparatory efforts in Guinea to address the interaction between subsystems including service statistics and medical supplies (eLMIS) and human resources (iHRIS) with the intent of developing dashboard applications, as well as applications that will allow MOH staff and the public to see services available at various facilities.
Infrastructure, electronic services, and equipment access and maintenance	WHO and others have provided computers to some 410 health centers in Guinea; for example, some have more than one computer even though there are around 1,000 health posts with none. In addition, solar panels have been provided to some health centers and district-level offices. District-level staffs have been trained how to feed information to the DHIS2 platform. In Sierra Leone, the CDC funded mHealth to conduct a pilot activity using tablets to input data at the facility level. Solar chargers are provided for the tablets and rely on GSM phone service for transmission.

Type of Challenge	Illustrative Actions Undertaken
Volume of indicators and data collected	In Sierra Leone, there is an exercise that has been initiated to trim down the indicators that are tracked and to modify the forms to track the indicators accordingly.
Human resources	<p>In Sierra Leone, the government provides support for staff to get graduate degrees in Health Informatics. CDC provides scholarships to train MOH staff in Emergency Management that includes the use of evidence. In fact, one of the cornerstones of the CDC training program is teaching students to collect, analyze, and disseminate critical public health information. In addition, the CDC implements an epidemiological training program in Sierra Leone that includes data analysis, but an informant suggested inserting data analysis coaches as part of the District Health Management Team. In Sierra Leone, among the different human capacity development activities implemented, the CDC also implements the Field Epidemiology Training Program (FETP) geared toward creating a cadre of professionals that can track diseases, obtain critical data, and turn evidence into action. In Sierra Leone, UNICEF is implementing a training activity to ensure that data are used as evidence for planning purposes at various government levels. This initiative is being conducted at the district level, and an HIS journal has been introduced at the facility level so that issues related to data use are recorded and then addressed. The following quote explains the actions conducted:</p> <p>“We started a project with the government to ensure that data is used at all levels. We now support a monthly in-charge meeting in all districts where health data is analyzed, disseminated, reviewed, and used. In all districts, the district team should be the action point tracker. After reviewing data, they need to identify issues and then they need to come up with actions points to address them and follow up. We also require HMIS Journal for all health facilities so they can record issues and record action points and follow up. The central level supports that.”</p> <p>In Guinea, technical assistance has been provided to support the implementation of DHIS2 throughout the country, including the development of a procedures manual for data management, training staff on platform use, and maintenance, with a focus on service statistics. MOH staff has been trained in data entry by entering “retrospective” data including data for 2015. In Guinea, there are two pilot regions using data entered for analysis purposes (Conakry and Kindia) through modules known as Data Demand and Use, and one of the issues addressed, for example, is an analysis of vaccination incompleteness rates.</p>
Catching up	Work in progress.
Strengthening evidence-based decision-making culture	There is indirect support to meet this challenge at different levels of the MOH in both countries. However, this came out more clearly in Guinea than in Sierra Leone, in part because there are multiple partners involved in supporting the different subsystems of DHIS2 in that country.

Familiarity with WAHIT

WAHIT experts paid courtesy visits to certain countries listed below to inform stakeholders of the technical assistance services soon to be made available to them. These visits were followed up by emails. The countries and services/individuals visited and the context of the visits are as follows:

Guinea	→ Met BSD and IDRS departments of the MOHs to present WAHIT
Sierra Leone	→ Met the HMIS department
Ghana	→ Participated in meeting of regional data managers of English-speaking ECOWAS countries
The Gambia	→ Participated in the WAHO DHIS2 training for data managers in-country
Nigeria (Ongoing)	→ Involved in WAHO training of Nigerian data managers on regional data warehouse; met with national HMIS officer and representative of from Nigerian CDC

In general, the awareness of WAHIT was very limited, with some study participants hearing about it for the first time. Only four of the 25 key informants interviewed in Sierra Leone and Guinea said they had heard of WAHIT prior to the interview.

In those instances, the respondents showed us a WAHIT brochure, checked their email/calendar logs, or remembered visits with well-known partners (e.g., University of Oslo).

Typical answers were:

“I have no knowledge of WAHIT.” (Guinea)

“No, today is first time I heard of this.” (Sierra Leone)

“I have heard of WAHO, but never heard of WAHIT. When was it instituted? Is this a USAID activity?”

Another respondent with some level of awareness said:

“A WAHIT team came by once, but after that no news. There was some email exchange, but after that total silence.”

And somebody from the IP community reacted by saying:

“Oh yeah, I heard about this in a recent DHIS meeting in Lomé. But [regarding] their role, what they do, how they complement other partners in each country, I have no details, but I have heard about it.” (Guinea)

For the others, there was either vague or no specific recollection of WAHIT in either Guinea or Sierra Leone. To initiate discussion that can help provide answers to this question, the E4D team introduced briefly the WAHIT project to the participants. Consequently, the discussion on this topic was mostly hypothetical and based on a short description provided by the E4D team.

This description was crafted using phrases borrowed from the POR protocol and is presented below.

1. WAHIT will be a regional team of experts based in WAHO in Burkina Faso that upon request from countries will be able to provide assistance to make technical improvements in the HIS of those countries, thus helping to strengthen public health systems.
2. The team will build local software developer capacity to support long-term sustainability of HIS investments in the region.
3. The team will support a strategic recommendation from the 2012 ECOWAS Health Policy and Strategic Plan to establish a regional HIS Centre of Excellence.

WAHIT Strengths, Weaknesses, and Challenges

The E4D team asked some questions to identify the perceived WAHIT strengths, weaknesses, and challenges. Answers to these questions can help us understand how study participants perceive a priori the TA that WAHIT may provide. As in the previous section, most people responded to these questions based on the description of the WAHIT model that E4D presented to them during the interview.

The WAHIT operational strengths, weaknesses and challenges perceived by study participants may be grouped into two large categories: (1) the modus operandi for WAHIT’s TA, and (2) what the content of the TA should be.

In terms of modus operandi of the TA, suggestions made by study participants may be organized around three majors areas: (1) integrating efforts to strategies, work plans, and specific actions already occurring on the ground to avoid duplication and/or competition with other IPs; (2) transferring competency so MOH staff can resolve issues in the future as they arise; and (3) adopting an implementation strategy characterized by promptness, innovativeness, and supportiveness including follow-up measures as needed, coupled with including hardware options as required. These topics are discussed below. In some instances, they are presented intertwined in the same manner addressed by respondents. Table 4 serves as a summary.

Table 4 – Summary of Strengths, Weaknesses, and Challenges

Categories of Answers	Main Topics Addressed
Strengths	<ul style="list-style-type: none"> • WAHIT TA conceptualized as supplementary and complementary to ongoing TA efforts • Relies on West African experts located in the region • Developing regional capacity to respond to emergencies
Weaknesses	<ul style="list-style-type: none"> • External funding has time limitations • TA may result in assignments out of WAHO that may be (too) short-lived • Physical proximity does not guarantee full understanding of local needs • “Fly in/fly” out model is not appropriate
Challenges	<ul style="list-style-type: none"> • How to create sustainable change • TA must be “top tier” in innovation • TA must accelerate change • Government must be involved as act as TA coordinator, despite limitations that may exist • Must become familiar with local needs first • Must avoid implementing “individual agendas” • Difficult to coordinate with other TA providers and IPs from afar • TA requires transfer of know-how as experts must work themselves out of a job

Integrating WAHIT’s TA with Ongoing Efforts

Regarding the need to integrate WAHIT efforts to other TA assistance on the ground on health informatics, one respondent expressed the following concept:

“WAHIT was envisioned to both complement and supplement. . . other assistance projects in the region. . . It was a result of the Ebola outbreak and the response to that. . . . There weren’t many people [who] could work on HIS in the region. . . . Most people came in from Europe or the U.S., it took them weeks to get there, [and] they did not [necessarily] understand the cultural context or the systems they were working with. WAHIT is meant to be a regional resource that different ministries can go to in the event of routine needs or in the event of an emergency; it is meant to work alongside other groups doing the same thing. . . . A lot of the groups that are there working on digital information systems are international [and are] working with Ebola funding, [but] that is not going to last forever. When they go, who is going to be left? There has to be a team run by a local entity like WAHO that can answer to the needs of the region rather than answering to donors or other outside groups.” (International respondent)

As discussed by various study participants, there are other technical assistance initiatives that are in place and implemented by different donors including the WHO AFRO Office headquartered in Brazzaville, UNICEF, and the CDC. In that regard, the E4D has found, for example, that WHO AFRO supports the implementation of an electronic surveillance system for polio eradication in Liberia.¹³ Those interviewed also mentioned eHealth Africa, which is not public but employs and develops health informatics in the region.¹⁴

¹³ Liberia receives technical support from WHO AFRO to strengthen its Acute Flaccid Paralysis (AFP) tracking, a strategy used in polio eradication. WHO AFRO and other IPs are helping Liberia to use the Audio-Visual AFP Detection and Reporting (AVADAR) mobile application to improve timely and early detection of AFP. For further details, consult <http://www.who.int/news/liberia-adopts-innovative-technology-improve-timely-detection-and-reporting-suspected-acute>.

¹⁴ The reader may visit the following website for more information: <https://www.ehealthafrica.org/ehealth-africa/>.

Although some participants on the Sierra Leone government side agreed with the attitude of “the more the merrier,” others were more skeptical and noted that WAHIT could exacerbate what may be already perceived as “**partner overload**.” Along these lines, one participant from the donor community made the following argument:

“There is a lot of support in the country, [but] there is still weak capacity [in] the ministry [to] create sustainable change. So, you think there is not good coordination with all of this, there is need for a stronger relationship. We are all pulling in different directions, [and] that’s a problem.” (Sierra Leone)

Others indicated the following:

“The government’s reaction depends on the support [they need] and who is available.” (Sierra Leone)

“Why should the government use this service when there are many others that give that support? So WAHIT should demonstrate that they are **top tier and relatively better**, otherwise it will be very difficult for this to succeed.” (Sierra Leone)

Another added some nuances to the argument to seek new ideas because some of the options adopted to date may have been ineffective or insufficient to cover all the issues that need to be addressed. That individual made the following statement:

“There are a lot of players—whether they are meeting the real needs is the question. There is a lot of ground to cover, [and] they are worried [whether] there is a place where someone could come up with something that could **accelerate the changes and results**. So new skills, new ideas, and new methods—progress is being made.” (Sierra Leone).

Any future Short-Term Technical Assistance (STTA) actions should consider what is already on the ground in Guinea, described the following way:

“The MOH **discusses permanently** with partners to define and redefine priorities, [and] evaluates how they are addressed through implementation. MOH tries to keep a **permanent dialogue** with different donors and puts them in contact with partners so that there are mechanisms in place to help [the government] implement activities.” (Guinea)

The E4D detected that there are regular meetings of technical working groups both in Sierra Leone and in Guinea. During these meetings, stakeholders review the progress made implementing work plans, determine gaps that merit attention, and decide what technical assistance is required and which government partner or donor is better suited to provide it. The E4D team believes that WAHIT must take advantage of these meetings to better understand what actions are being implemented, who is responsible for them, and which gaps may exist. That information will be helpful to identify where WAHIT can be useful.

The relevance of integrating the technical assistance service WAHIT may be demonstrated by looking at the word cloud presented in Figure 3 below, generated using Atlasti.8. This word cloud is obtained when analyzing responses associated with the comparison of WAHIT with other models to digitize HIS. The reader will notice how distinctive “existing” is compared with other words, reflecting its frequent use. In this context, existing refers to existing support or existing expertise.

Figure 3 – Word Cloud for Responses Provided by Study Participants When Asked to Compare WAHIT with Other TA Models



In Ghana, study participants suggested that the entry point for the implementation and operationalization of WAHIT should be through Ghana Health Service (GHS) and not MOH because the former is directly involved with the implementation of HIS in Ghana. How this interaction will be handled is key to the successful implementation of the WAHIT model in Ghana.

Further, respondents in Ghana, especially those with implementing partners, argued that the GHS would oppose any new technical assistance that did not support the District Health Information Management Software 2 (DHIMS2), which is considered to be the GHS’s “baby” with respect to HIS. Any new form of digital TA must reinforce existing systems in place. GHS will not accept the running of parallel systems. In this regard, one study participant in Ghana said:

“First of all, government is reluctant. When I say government, I mean Ghana Health Service is **reluctant to have parallel data collection systems**. When you go to the Project Planning Monitoring and Evaluation (PPME) Unit, now they will tell you that we built the DHIS2, we have the technical know-how, we have the people in-country. All we need to do now is **enhance the effectiveness** of it.

Along the same lines, the digital HIS space in Ghana is currently crowded with many implementing partners who are trying (sometimes tacitly) to pursue their individual agendas instead of wholly supporting government efforts. This has resulted in the failure of several projects that were meant to supposedly enhance digital HIS in Ghana.

In this regard, a respondent in Ghana said the following:

“They [IPs] keep distracting country systems. I have worked with them before so I know what I am talking about. They keep distracting country systems by introducing things that are either already available rather supporting country systems to grow, [or] they try to introduce other systems that [will collapse] the moment the funding stops. We have been able to put our feet on the ground to dictate the pace even though sometimes we are seen as troublemakers.”

And another study participant in Ghana added:

“In Ghana, it’s very crowded. Everyone is doing something. You have a whole list of [agencies], and there are only very subtle differences between the things people are doing. It’s very similar. It’s like almost 1a, 1b, it’s not 1, 2, 3, 4, and 5. They are linked to different funding streams.”

The difference between remote, short-term, and in-country technical assistance is clearly recognized. Important challenges for WAHIT will be how to ensure remote TA, and how to wisely integrate it into existing TA. Those who argue in favor of remote technical assistance recognize the importance of being familiar with the context in advance; otherwise, it will be difficult to perceive the real issues. If short-term technical assistance is to be provided, study participants argued that it would need to be supported by ‘focal points’ in the country that follow up on the implementation of recommendations and provide any support that may be needed along the way. Different arguments are presented in favor of options other than remote access, including the need to build and earn trust, the rather high number of stakeholders, and the need to arrive at consensus despite their limited availability and competing needs.

Many participants criticized the prospect of a “fly in/fly out” approach. This refers to a technical assistance approach that requires international experts, expats, or third-country nationals (TCNs) to make a rapid visit to the country to provide a solution (which may, at times, be imported), make recommendations, and leave the country soon after, with little or no follow-up to support the implementation of those recommendations, if adopted. It could be considered a bare-bones version of short-term technical assistance. That is, it may entail just a short visit to help address a specific and possibly urgent problem, without including necessary time in-country to try out the solution that may have been proposed and adopted, or to support initial implementation to help resolve glitches that may emerge. The University of Oslo may have the opportunity to do short visits to the region. However, the relationship between West African countries and the University of Oslo has evolved over years, trust has been developed, and communication mechanisms seem to have been established to allow for such an approach.¹⁵ Although not expressed in these terms, the E4D team felt that the opposition to short visits may be associated with the need to “learn by doing,” and the preference for “doing” it with expert guidance. On a similar note, a study respondent commented that getting TA recipients to properly use software solutions developed for them may require closer and possibly extended mentoring, thus the need for a longer stay. Physical proximity may facilitate quick fielding, but problems to resolve may require longer stays than anticipated.

In this regard, one study participant pointed out the following:

“Some sort of ongoing support certainly is necessary, not fly in/fly out for sure.” (Sierra Leone)

Those who support having a local presence made the following arguments:

“Creating these systems takes a long time, and it is harder and longer and more complicated than people think it is. It’s going to take longer-term deployment, six months or more, because there are a lot of stakeholders involved, people within the ministry travel a lot, and getting the right information from the right people to move something forward can take a full week or more. There is a lack of timeliness [in] getting things done [that] doesn’t seem to gel with the model of short-term technical assistance.” (Sierra Leone)

“What you haven’t mentioned is a project manager—you need someone who is keeping track of moving things forward in the timely manner, communicating with partners, [and] managing the process, which can be **unwieldy and can be hard to do remotely**. You need a point person in each country [who] can manage these processes, support the technical assistance, and be able to move things forward when these people return to WAHIT.” (Sierra Leone)

“True TA implies sitting down with recipients—**not dictating the solution in advance**, but identifying needs, searching together for solutions, supporting them during implementation and evaluating them. When

¹⁵ For further details on the support from the Department of Health Information System Program (HISP) from the University of Oslo (UiO), readers may review the following document *HISP UiO Strategy 2014-2016*, available at <https://www.mn.uio.no/ifi/english/research/networks/hisp/hisp-uio-strategy-13.03.2014-2014-2016.pdf>.

[experts] come for 10 days and come back for five more days three months later, the context has changed, the narrative has changed, the priorities have changed, and the MOH vision may have suffered modifications. **When systems are still fragile, it is better to be together [to] meet and discuss.**” (Guinea)

WAHIT may eventually be judged on quick responsiveness, especially during an emergency. It may also be judged in terms of long-term availability as well as the capacity of the organization to develop necessary skills to have the local trainees take over and become independent of the technical assistance provided. For some study participants, technical experts should be providing the necessary help to work themselves out of a job because any skills used to resolve a problem should be transferred to recipients. Indeed, some study participants seem to define sustainability not in the sense of the technical assistance being available over the long run, but in terms of the lasting effects of that assistance. In other words, providing the TA should lead to doing away with it as recipients obtain necessary skills to handle future similar issues on their own. To achieve this goal, WAHIT needs a sufficient number of experts with high availability and flexibility. Two study participants made the following observations:

“I do not see WAHIT operating as a structure for a long time, 20 or 50 years. I see sustainability in terms of WAHIT actions—one has to work to **pass the baton to others [in the country]** ...” (Guinea)

“There should be a sustainable strategy and **not a mere project that is limited in time**, which often leaves us with bitter taste. Focus on data management, responsiveness, solidarity, and mutual assistance between countries.” (Guinea)

In Ghana, most key informants felt that “TA in HIS” is still very vague and needs to be clarified and defined in more concrete terms so that countries can consider making a request based on more information at hand. Overall, respondents felt that Ghana was more advanced in its digital HIS and will always look inward instead of outside. However, any TA and WAHIT TA, for that matter, should aim to live, learn, and understand country systems that they seek to help and not just propose solutions that may be out of context.

In this regard, one study participant in Ghana said the following:

“So, when the country submits a request, who supports them in submitting that request? Can they just submit anything? Is there any guidance as far as what type of request they can submit? I guess the big question for me is, what are your areas of specialization, if any? For example, some of the illustrative examples you gave me incorporate different disease programs and their requirements into the larger system, so what is the purview of support that WAHIT provides? Is it anything that we must do with HIS? Is it improving reporting? Are there categories of requests, and how can you ensure that the government doesn’t go beyond what the purview or SOW of WAHIT is? Can they just ask for anything? (Ghana)

Another study participant in Ghana made the following comment:

“Country members have the capacity. I hate it when agencies and other things come and say we want to bring you a TA. They come—most of them know nothing. They come and rather [than] build on the knowledge of people here... Bringing in this TA and others, when they come they don’t do anything, the people here end up doing the work, and they end up taking all the credit. They end up taking all the money back to their country. Sometimes I just don’t get it. We have the people here. We have deployed the DHIMS with our own local capacity. Yes, we brought a TA but the TA came and lived with us and worked with us.” (Ghana).

That said, the WAHIT offers some potential advantages to study participants. Some of the advantages mentioned are as follows:

- A regional hub for support, which has collected know-how from the region
- The possibility of identifying the right experts and avoiding revisiting the issue by different experts overtime
- Potentially becoming a one-stop shop for HIS issues

Operational Challenges

The study also explored operational challenges that the WAHIT project has experienced since the beginning of implementation. This information was collected only from USAID and Palladium representatives. Participants listed three major challenges: hiring and institutional affiliation of experts, location of the WAHIT members, and countries benefiting from the WAHIT TA.

Hiring, institutional affiliation, and onboarding of WAHIT experts:

Delays have occurred as partnership members have had to decide on the composition of the WAHIT expert team (e.g., software developers vs. health informatics), the institutional affiliation of the experts (e.g., WAHO vs. Palladium), and an onboarding process. Once on board, experts follow the standard operation procedures (SOP) of their affiliated organization and not WAHO's, which creates confusion. Further, waiting for resolution of institutional affiliation and onboarding options has created the need for Palladium to provide short-term technical assistance, which has come from Palladium experts from another region of the world who are not Francophone, generating implementation limitations of its own.

Placement and geographic location of WAHIT members

Deciding which organizational umbrella and which geographical location is best for the WAHIT team has involved a different set of negotiations among stakeholders. Regarding the organizational connection to WAHO, one option considered was to have WAHIT be affiliated with the Africa CDC. This option faced opposition as the mandate of that organization is to focus on disease prevention and control, and WAHIT is expected to play a larger role in health information systems, which does include the former but is not limited to it. A decision had also been made about the physical location of the WAHIT team. Some stakeholders expressed preference for sites offering (1) ease of business travel to facilitate the team's trips in the region to fulfill TA requests; (2) necessary connectivity to facilitate virtual responsiveness; and (3) frequent professional growth opportunities to keep abreast of HIS developments. Accra and Dakar were sites that met those criteria. However, the final decision was to have the team based at WAHO headquarters, at least during its initial phase, so that the team is better associated with the institution and gets to know WAHO better from the inside. Those decisions could influence recruitment and the qualifications of candidates attracted fill the available positions.

Countries benefiting from WAHIT's TA

The funding source requires that the TA provided through WAHIT focus first on the Ebola-affected countries "while responding to other countries as necessary," and expand to all West African countries at a later point in time based on standard operating procedures yet to be set up. The MOH in Liberia, however, did not express much interest for WAHIT support given the "massive" assistance channeled to the country during the Ebola emergency and during the recovery period given the number of operating units in-country. The geographic coverage of WAHIT's TA is more limited than initially anticipated. As one study participant put it, "It is hard to work only in Ebola-affected countries when one-third of the countries tell you that they do not want you there."

Lengthy TA requesting procedures

One study participant anticipates that WAHO will require countries to (1) develop a Scope of Work (SOW) for the TA that will be requested from WAHIT, (2) have the SOW reviewed first by the WAHO in-country representative prior to submission to WAHO in Burkina Faso, and (3) receive validation by the TA review desk at WAHO HQ prior to responding to the request. This procedure will take time and may bring new operational challenges. One

option offered by the same study participant is to have WAHIT TA participate in the development of the SOW to begin with to help countries define it suitably.

Suggestions Concerning Factors that May Help WAHIT's Success

Study participants offered many factors that could help WAHIT be successful. The following list summarizes those suggestions. Some of what study participants mentioned when answering questions on how the TA from WAHIT can be successful retakes on issues raised earlier from a different angle.

Aspects that (re)appear in responses provided by informants may be grouped as follows:

Needs Identification and Government Involvement

- Study participants suggested that WAHIT conduct both a partner mapping exercise to identify who is doing what where and a needs assessment of various countries to propose solutions by leveraging digital HIS resources in advanced countries like Ghana.
- They also suggested that MOHs remain involved beyond the “Technical Assistance Request Stage” to make their solutions sustainable in the long term. The TA offered should be embedded within country systems to ensure sustainability. This can be done effectively by engaging the government at all levels.
- Any technical assistance must be integrated into annual work plans.
- Work with a focal point/contact person at the MOH to avoid duplication of experts assisting the government to address similar issues.

Accessing the TA

- Need a prompt response to requests made with no/limited delays in identifying and fielding experts.
- Create a pool of experts from which to draw the assistance.

Quality of the TA

- The technical assistance team must be top-notch and technically superior to any health informatics technical assistance that is available already in country.
- Follow up on the adoption of measures to determine any additional support that may be needed.
- Avoid “one-size-fits-all” solutions, examine what is needed locally, and choose the most appropriate solution for the issue confronted by specific countries.
- Decide whether the technical assistance will be open-ended or focused on certain specialized areas, which may be presented as a menu of capabilities.

Transfer of Know-How

- WAHIT TA should be a two-way affair and adopt a collaborative approach to ensure that TA experts are perceived as rolling up their sleeves to do the work required hand in hand with TA recipients. The E4D teams believes that this may be achieved by putting the TA recipient in the driver's seat and in control of what is being done. Under this approach, the expert offers options to address issues at hand, and explores the pros and cons of different options while leaving the final decision of what will be implemented to the local counterpart.
- MOH officials interviewed suggest that competencies be transferred to ministry staff so they can handle similar problems in the future. E4D suggests that the SOW of the TA assignment address expected accomplishments, including skill acquisition by recipients. WAHIT TA will be unable to turn all recipients into software developers, and expectations need to be realistic.

Sustainability

- For the long term, sustainability of WAHIT hinges on funding.

Specifics Topics WAHIT's TA May Focus On

In Guinea and Sierra Leone, the WAHIT model is perceived to have some limitations because it focuses only on technical assistance, and countries may need more than TA. Although experts may have long-term assignments while associated with WAHO, their assignments to given countries making requests are likely to be of shorter duration. In the event that only STTA missions out of WAHO are possible, WAHIT should consider providing assistance in the following areas:

- Help different disease surveillance areas pick up speed and catch up with more advanced tracking operations as is the case with malaria under Integrated Disease Surveillance and Response (IDSR) actions
- Review different forms in order to trim them and get to the essence of data that is needed for decision-making, thus reducing overburdening administrative units involved in the process
- Improve quality of collection, transcription, submission and integration of data leading to data completeness and timely availability
- Improve central and local capacity to analyze and use data available provided quality is improved
- Address data/information interoperability issues, given that different components of DHIS2 may progress at different speeds
- Ensure maintenance and update of hardware and software solutions in conjunction with existing TA partners well-entrenched in the countries with a history of continuous effective support
- Develop a strategic Human Resource Development Plan and help implement it, including the training of teams at the district level that can in turn train staff at the health center level using a Training of Trainers approach

Relevance of WAHO's Involvement and Oversight

WAHO is a respected subregional institution, and government officials often participate in subregional events. Per the suggestion of study participants, WAHO should look for mechanisms to make WAHIT expand beyond Ebola-affected countries and should eventually look for mechanisms to make the TA more permanent. Since WAHO has point persons in each country, they may become a conduit for developing bridges between WAHIT and MOH officials. For the latter, time responsiveness will be crucial and bureaucratic procedures should be streamlined to avoid delays.

For study participants, WAHO can support WAHIT to play a regional role and offer South-to-South collaboration. That is, identify the subregional experts, create a network, and have them travel around, bringing their knowledge and expertise across countries. This mechanism could eventually prove less costly.

In addition, there are actions that WAHO is already supporting in the countries, which could serve as a springboard to expand it to other areas. There are TA mechanisms and platforms that WAHO has in place that could be mined to support WAHIT, including the cross-country data management forum that meets periodically; some study participants suggested that WAHIT could take advantage of those meetings.

Financial sustainability is indeed an issue and study participants suggested that the technical assistance costs will eventually need to be absorbed by WAHO. There are different views about fee for services. Whereas some study participants argued that this could be an option after trust in WAHIT has been developed, others were more cautious given the financial limitations faced by countries. As such, concerns about a fee-for-services approach were expressed. One government official shared the following opinion:

“If our own funds must cover the expenses, [that] would represent a big challenge. But if, on the other hand, there is a funding source, there would be no major difficulty, nothing would be insurmountable.” (Guinea)

Along the same lines, another participant expressed the following opinion:

“WAHIT must be absorbed by WAHO’s budget. This is what will make tomorrow effective for both WAHO and the countries. Direct country payment for services is not an appropriate option. If countries already fund WAHO, that should give [them] the right to access WAHO-funded interventions.” (Guinea)

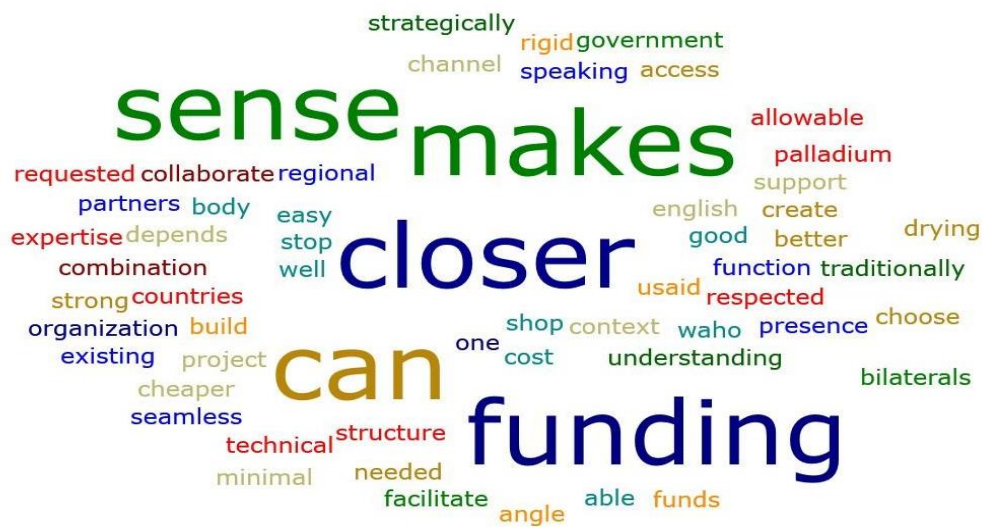
In Ghana, study participants perceive that WAHO’s oversight of WAHIT is important because it reinforces the position of WAHO as the leading organization for health issues in West Africa as well as provides visibility for the organization. As one participant explained:

“I think management [made] a correct decision because the project [was] supposed to reinforce WAHO capacity in the leadership of the region on this WAHIT. To put this in Abuja, Accra, or Dakar, it can mask the visibility of WAHO.”

Operational regulations and cumbersomeness of SOP for requesting assistance may be perceived as a challenge. WAHO SOP will require full Terms of Reference (TOR) prepared and discussed by the MOH with the country WAHO representative. Once agreement is reached, the TOR would typically be sent to WAHO for review, approval, and implementation. This process is not likely to be expeditious and countries may need assistance preparing the TORs; however, WAHIT could potentially play a role in that preparation.

The word cloud generated in association with the WAHO oversight of WAHIT appears in the following figure. Words that stand out are “makes sense” and “closer,” reflecting the general acceptance of the TA teams being housed at WAHO. The word “funding” reflects the concern about WAHIT being project-related, thus facing the risk of being unfunded once the project that funds the activity comes to an end.

Figure 2 – Word Cloud for WAHO’s Oversight of WAHIT



The Partnership Behind WAHIT

The last research question addressed by the baseline focuses on the perceptions stakeholders have about the partnership that brings together WAHO, USAID, and Palladium. The assessment of the partnership behind WAHIT was not straightforward given the level of awareness of the study participant regarding WAHIT. Nonetheless, after providing relevant information on the context, participants’ opinions were recorded.

The E4D team perceived this to be too abstract for many of the study participants. At times, study participants provided answers to questions about the partnerships that led the Operational Research (OR) team to hypothesize that WAHIT is perceived as a rival instead of a complement by the current IPs.

The partnership could be effective as different strengths offered by partners are put together: USAID Global Development Lab drives digital TA considerations, WAHO has regional presence and recognition, and Palladium has the technical expertise to satisfy country needs. Countries currently benefit from in-country TA with ground supporting partners. In addition, the regional hub would help reduce redundancies and duplication.

There were responses that seemed like a projection of the respondent’s situation, including the following:

“USAID is active in this part of the world—they’ve got some good experience, a good network. It is good to have people [who] understand the context, have a network that they can draw on, [and] relationships. I am not familiar with Palladium, I do not know. A local partner is pretty important—the CDC for example, technical experts in public health, provides really good support to the ministry.” (Sierra Leone)

Along the same lines, another added:

“In research a three-way partnership between MOH, the National Center Against AIDS, and a foreign specialized service institution worked well. They had no problem building a three-partner alliance, so [no problem] is to be expected here.” (Guinea).

The OR team was reminded, however, that we cannot do away with evaluation. This respondent said the following when discussing the partnership:

“If some make commitments about their contributions and there is a follow-up, the results of evaluations can provide ideas, transparency, the extent to which commitments were honored, the partnership can be maintained, and if the results are satisfactory we can detect factors that can make it more stable and durable.” (Guinea)

Conclusions and Discussion

The main objective of this study was to assess the awareness of, demand for, and satisfaction with WAHIT and its services in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and one Ebola-unaffected (*nonintervention*) country (Ghana) at the early stage of the project implementation.

As a preamble, the reader is reminded that various donors and partners provide support to efforts carried out by the MOH both in Sierra Leone and Guinea to digitize different subcomponents of their health information system and integrate them under one single platform: DHIS2. Most of these efforts were initiated in 2016 and are currently under way with different levels of maturity. The efforts are intended to obtain, collate, transmit, analyze, and use data that pertain to different domains: service statistics, disease surveillance, supplies, and human resources. Those efforts are to be expanded to include other subsystems such as finance, infrastructure and equipment, laboratory and medical imagery, and research.

Awareness of WAHIT among MOH Personnel

Findings from KIIs highlighted that the large majority of participants were not aware of WAHIT during the baseline study. The E4D proposes to use multiple avenues to inform different stakeholders of what WAHIT is, what it can do, and how countries can tap into the technical assistance the team may provide. These could include meetings that WAHO has already scheduled in the coming months. Introductory visits to countries need to be complemented with other marketing activities including presentations in already scheduled meetings that bring together country representatives at the regional level in the next quarter. WAHO can also consider how to rely on the WAHO representatives in the targeted countries to further expand awareness about WAHIT’s existence and role. The message needs to be hammered home.

The E4D team believes that the message needs to be crafted carefully in order to clearly specify what types of services may be provided and what accomplishments may be possible. There are expectations for support from MOH officials that do not seem to be entirely focused on health informatics. For example, one may argue that the call for streamlining indicators is related to health information and not health informatics per se. In the same way, developing skills in data interpretation and use may be conceptualized as a “post-health informatics” need. WAHIT should clarify the breadth of the TA that may be provided. The message should also indicate how countries make TA requests.

Whom do MOH officials trust and prefer to address HIS technical challenges to? Does the introduction of WAHIT affect these preferences?

By interpreting findings, the E4D concluded that in Sierra Leone and Guinea, WAHIT has to find its place in the technical assistance environment that is already available to support an integrated digital health information system. In so doing, it must seek to be complementary and avoid being seen as a potential rival, a misperception that was expressed by some of the study participants. There are many partner platforms that already exist that bring together partners for progress updates and decision-making purposes and provide guidance to partners to implement work plans.

E4D recommends that, if possible, WAHIT join those meetings, even remotely via conference calling. Some of these meetings include MOHs and partners while others are limited to USAID-funded partners. WAHIT can consider participating in both as that will give them a better sense of what is occurring on the ground and will allow stakeholders to perceive WAHIT as part of the larger TA team that supports government efforts. This involvement will help the WAHIT team be

recognized as the members of the group of experts supporting health informatics and become acquainted with activities being implemented on the ground, and in so doing, identify opportunities for support in which they specialize.

The E4D team considers that assistance provided by WAHIT should not be limited to the strategic level, but that it should also reach the operational level. In this regard, consideration should be given to provide technical support to districts. That support may start as a pilot project that can be later expanded based on lessons learned and the actual need expressed by countries.

Ghana's digital HIS (DHIS2) is advanced to the extent of being touted as one of the best in Africa. The priority of the Ministry of Health and Ghana Health Service at the time the baseline was conducted is not on seeking "outside help" for TA but strengthening the effectiveness of DHIS2. Therefore, the GHS will kick against the introduction of any model that will run parallel to DHIS2 without reinforcing DHIS2. Furthermore, the digital HIS space in Ghana is chock-full of IPs who are already doing similar projects on HIS, many of which have failed in the past, thus any new TA is always viewed with skepticism. Many key informants considered that Ghana was in a position to leverage its HIS know-how across West Africa given the country's level of expertise rather than the other way around. In this light, how WAHIT frames, defines, and projects its TA model is key. Entry into countries with advanced HIS like Ghana will be difficult and a lot trickier than in countries where systems are less developed and may be more welcoming of a new TA model. Along those lines, in the view of the E4D team, WAHIT may need to first enter countries with weaker systems, garner support, and make a name, and use that wherewithal to leverage its entry into countries with advanced systems. That notwithstanding, WAHIT has to find a way of embedding its TA into country systems because success hinges on sustainability and this will get the buy-in of most Ministries of Health.

How do relevant stakeholders outside MOHs perceive WAHIT and this model?

There are certainly different TA models that are possible and may be operational in the countries visited. Those models may be placed on a continuum that is determined by a time dimension, in this case by the amount of time that expat or TCN experts spend on the ground working hand in hand with TA recipients. At the lower end of the continuum would be remote assistance, which implies no time on the ground with TA recipients, and is based on the provision of all support virtually or via phone. The second gradation on the continuum would be longer but still short presence on the ground to identify a problem, provide a solution, and leave it to the TA recipients to implement, even if followed up remotely. This is an approach that has been coined by some of study participants as the "fly in/fly out" model. A third gradation includes longer STTA that requires the expert to identify the problem, provide recommendations, and initiate the implementation of recommendations with the TA recipients. A final gradation can be extended technical assistance ranging from months to years, where the expert expat provides assistance in an array of issues over time and allows recommendations to be tested, evaluated, and modified to increase efficiency and effectiveness.

Although most of those interviewed, especially among the public sector, remain open to options, the first two models, remote TA and "fly in/fly out," were not perceived in a positive light. The main reason for that is that government-level officials are interested in getting support that allows them to become autonomous and able to stand on their feet after accepting the support of experts from other countries. In a sense, TA is perceived as "suicidal" in nature because it should be phased out over time. Experts should work themselves out of a job, thus proving their effectiveness. So, WAHIT at WAHO's office in Burkina Faso may operate over the long run, but their TA to specific countries should not, especially when addressing specific issues. Repeated technical assistance from WAHIT or anybody else that does not solve issues or does not allow local staff to gain the necessary skills to solve those issues on their own will be perceived as ineffective.

For the E4D team, it may be possible to conceive the support in stages. First, provide support over a short period of time, which will allow for problem identification, the identification and discussion of potential solutions, and the initial implementation of a solution selected jointly. At the second stage, there may be intermittent visits to troubleshoot and find solutions to problems that arise during implementation, and then end up with remote access to address lingering issues. The

guiding approach in such a staged intervention is, as mentioned, to allow government officials to gain autonomy. However, this staged approach will come up against the extended time needed to resolve any request, leading to unwanted delays. So, one should seek to strike a good balance between the need expressed by government officials to gain autonomy and allocating enough time for the process to occur. An important aspect of the WAHIT strategy, for many study participants, is to have a focal point of contact within the MOH. WAHO representatives in the given countries may also help WAHIT carry out their technical mission by providing needed administrative support and liaise with WAHO.

In essence, once the technical area of support is identified, one way to organize the WAHIT TA is to start with a short-term TA visit on the ground followed by intermittent visits as needed, and provide remote assistance to ensure smooth implementation of recommendations and know-how transfer.

How is/isn't WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?

Whether at the central or the district level, countries may need to have different specialists working together to tackle multiple health issues. If the health information subsystems are relatively independent of each other, so are the specialists. The OR team perceived, for example, that MOH officials working in subsystems remain within them and could potentially work in silos. The subsystems may be operating relatively independent of each other. If this hypothesis is true, the staff in each one of these subsystems remain disconnected and fragmented. DHIS2 may help bring the subsystems together, and in so doing bring together the staff associated with them and permit mutual exchanges between them and facilitate the existence and use of interoperable data as well.

How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?

WAHIT should take advantage of the respect stakeholders have for WAHO and have WAHO advocate for these services through the different mechanisms that WAHO has to communicate with countries and bring them together. The prospect of creating a Center of Excellence on Health Informatics within WAHO is appreciated by many of the persons interviewed through this exercise.

What are WAHIT's operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?

Clarifying which types of issues WAHIT may address will come in handy as it will be clear to potential customers what type of support may be provided. Thus, the suggestion was made by some of the study participants to have WAHIT TA be menu-driven as opposed to open-ended.

Given the fact that accuracy, completeness, promptness, integration, interoperability, and the use of data analysis for decision-making process are high on the agenda of government officials both in Sierra Leone and in Ghana, support that may be provided in response to these concerns will be well received. Government officials may react equally well to TA that can help districts improve their involvement with DHIS2 and be able to be responsive at the district level to address health issues that emerge in their own jurisdictions. If there is an interest in obtaining TA that can make central structures become autonomous, there is also a cry to extend that autonomy to the districts.

Is this partnership model (USAID, Palladium, WAHO) effective?

The partnership could be effective as different strengths offered by partners are put together: the Global Development Lab provides funds and leadership, WAHO has regional presence and recognition, and Palladium has the technical expertise to satisfy country needs. Countries currently benefit from in-country TA with supporting partners. In addition, the subregional hub would help reduce redundancies and duplication.

Partnerships inevitably require negotiations between partners about multiple operational aspects of the technical assistance team that will be organized and eventually deployed to countries targeted. Reaching agreements about WAHIT's

composition, onboarding and where to place the team within WAHO, and where the team should be based has taken time and delayed the implementation of technical assistance activities. Good coordination between partners will be essential. Further, as suggested by the study participants, decision-making mechanisms must be clearly established from the beginning to reduce friction and delays. As one person put it, “The partnership constitutes a strength of the design, but without good coordination and decision-making procedures, the strength may dissipate and turn into a weakness.” The E4D team believes that different perspectives within the partnership need to be reconciled quickly and the differences of standard operating procedures between participating partnership organizations identified early in the process to anticipate solutions and avoid implementation delays.

Summary of Tactics

The list below suggests tactics that WAHIT may adopt in the next few months:

- Clarify the message including the services that WAHIT can provide. Become menu-driven and not open-ended.
- Develop/expand promotional strategy, and identify the different channels to deliver the message and drive it home. This effort may include sharing WAHIT work plans.
- Become familiar with strategies, annual work plans, and regular progress reports for the past year.
- Participate in sessions where partners meet to discuss issues, including sitting in the technical working group meetings.
- Identify potential TA needs.
- Craft a menu of technical solutions offered, and further develop any Fact Sheets that may have been prepared.
- Propose areas where support may be provided to specific government units.
- If consensus is reached with government officials, help develop SOW.
- Have the MOH participate in the recruitment process; hold the MOH responsible for the daily supervision of the consultant and for approving the final products, etc.
- Hire and field consultants.
- Do service follow-up and evaluate TA provided.

ANNEXES

Annex 1 – List of Persons Interviewed, Institutional Affiliation, and Contact Information

	Name	Organization	Job Title	Phone	Email
SIERRA LEONE					
1	Won Ki Hong	UNICEF	M&E Specialist, Child Survival and Development	Office : +44 2033579278/9 Ext :7008 Mobile: +232 79 163 312	whong@unicef.org
2	Royston Wright	UNICEF	M&E Assistant, Child Survival and Development	Office : +44 2033579278/9	rowright@unicef.org
3	Les deWit	eHealth Africa	Software Project Manager	Mobile : +232 99901000	les.dewit@sl.ehealthafrica.org
4	Victoria Agbara	UNICEF Consultant	Institutional Capacity Building Advisor	+232 7949 7153	vagbara@yahoo.com
5	Wogba Kamara	MoHS	HMIS Lead	232 76 73 4513	wogbaepkamara@gmail.com
6	Michelle Sloan	CDC	Acting Surveillance and Epidemiology Team Lead, Associate Service Fellow, Global Health Protection and Security	404 718 8928	jtg@cdc.gov
7	Emily Nicholson	IntraHealth	Senior Informatics Officer	919 313 3550	enicholson@intrahealth.org
8	Adewale [Wale] Akinjeji	WHO–Sierra Leone	Technical Officer, Health Systems Strengthening		akinjeji@who.int
9	Roland Conteh	MoHS	National Disease Surveillance Project Manager	076 612 812	Rmconteh09@gmail.com
GUINEA					
10	Nils Kaiser	USAID Guinea/The Global Development Lab	ICT Advisor	+232 99 105 000	nkaiser@usaid.gov
11	Dr. Diallo Telly	MOH	Head of SNIS	+224 622 927617	itellydiallo@yahoo.fr
12	Dr. Abdoulaye Kaba	MOH			
13	Dr. Alpha Amadou Diallo	MOH			dalphahm@yahoo.fr

14	Dr. Allioune Camara	MOH	Malaria Program		
15	Dr. Diakite Souleymane	MOH	Malaria Program		
16	Dr. Sano Nagnouma	MOH	Director of Pharmacies		
17	Dr. Yeroboye Camara	MOH	Planning Subdirector		yeroboye@yahoo.fr
18	Dr. Boubacar Diallo	RTI	COP / EPI-DETECTE/CDC	+224 625 29 90 65	bidiallo@rti.org
19	Almany K Kaba	RTI	IT Specialist	+224 623 30 57 83	akaba@guinea.rti.org
20	Dr. Rahim Kebe	MEASURE Evaluation	COP	+ 224 622 87 42 97	
21	Diao Diallo	MEASURE Evaluation	DHIS Expert	+224 662 25 61 06	diao_diallo@gn.jsi.com
22	Donatien Ntambue	CRS		+ 224 625 21 40 17	
23	Dr. Sakoba Keita	MoH	Director General of the ANSS	+224 622 93 13 90	keita_sakoba@yahoo.fr
24	Mamadou Maladho Diallo	MOH	Human Resources, IT	+224 666 80 28 77 +224 622 49 42 28 +224 655 93 49 71	maladho90diallo@gmail.com
25	Aliou Badra Diallo	Engenderhealth	Human Resources, IT Advisor		
GHANA					
26	Obed Asamoah	USAID/Systems for Health	M&E Advisor	+233 540 11 37 38	oasamoah@urc-chs.com
27	George Frempong	USAID/Evaluate for Health	Health Management Information Systems Specialist	+233 501 62 06 41 +233 244 69 97 71	gfremping@msi-ghana.com
28	Justice Ajari	USAID/Evaluate for Health	Senior M&E Advisor	+233 248 56 60 85	jajari@msi-ghana.com
29	Solomon Atinbire Abotiba	PATH	M&E Database Specialist	+233 244626227	aabotiba@path.org
30	Atsu Ayi	Ghana Health Service	Health Information Officer		
31	Kwadwo Asante	Ghana Statistical Service	Director of Administration	+233 244614276	kasante@statsghana.gov.gh
32	Dr. Elizabeth Asante	ISSER	Researcher		eaasante@ug.edu.gh
33	Emmanuel Kuffuor	Population Council	Research/ M&E Advisor	+233 262 09 70 02	ekufffour@popcouncil.org
34	Rubama Ahmed	USAID Ghana	COR, Health Systems Strengthening		rahmed@usaid.gov
35	Alfred Oselen Amoatwo (pending)	USAID West Africa Regional Mission			aamoatwo@usaid.gov

BURKINA FASO/WAHO/USAID					
36	Tome Ca	WAHO	H Information Officer		tca@wahooas.org
37	Liz Nerad	Palladium	Program Manager		<u>Liz.Nerad@thepalladiumgroup.com</u>
38	Rebecca Saxton-Fox	USAID	ICT Policy Advisor		<u>Rsaxtonfox@usaid.gov</u>

Annex 2 – Mapping of Research Questions, Instrument Design, and Type of Study Participant

Domains	Questions	BASELINE				
		Questions for MOH officials	Questions for IPs	Questions for WAHO	Questions for WAHIT/ Palladium	Questions for USAID
1. Informant Profile	1.1 What is your professional background?					
	1.2 What is your current role at [respondent’s organization]?					
	1.3 Have you worked in or are you responsible for other countries in the region? What thematic areas and sectors?					
2. What digital user are we interviewing?	2.1 What training, if any, have you received on Health Information Systems?					
	2.2 What training, if any, have you received in digital disease surveillance and reporting?					
	2.3 What health information data sources do you consult to make public health decisions? (Probe: Is it facility-related? Disease surveillance-related? Both?)					
	2.4 What type of information are you seeking in these data sources? (Probe: Is it facility-related, disease surveillance-related, or both?)					
	2.5 How useful are these sources to satisfy your information needs? Why? (Probe: Is that the case of facility-related data? And for disease surveillance data?)					
	2.6 Are these sources digitized? (Probe: Is facility data digitized? Is surveillance data digitized?)					
	2.7 What are the main challenges facing digital HIS in [COUNTRY], if any?					
	2.8 What activities and/or plans does the government/MOH have to overcome these challenges?					
3. How aware of WAHIT are relevant MOH personnel? How does awareness change over the project life cycle? (Change will be identified through information from two data collection points)	3.1 Where should you (Government) first turn to get technical assistance to address these challenges?					
	3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? (Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?)					
	3.3 Have you heard of WAHIT? If so, what role is it playing? (IF NO, END THE INTERVIEW)					
	3.4 What makes WAHIT relevant to provide technical assistance to support digital HIS?					
	3.5 What aspects of HIS are likely to be improved through WAHIT support? (Probe: Anything else, such as improved quality of data, reduced reporting delays, digital reporting?)					
	3.6 Could this assistance be provided by any other technical assistance mechanisms, in-country or external?					
	3.7 What would make/makes WAHIT involvement an option?					
	3.8 What services would WAHIT have to offer to make it a viable technical assistance option?					
4. What level of demand is there for WAHIT services? Is demand	4.1 Has the MOH requested WAHIT assistance? (IF NO, END THE INTERVIEW)					
	4.2 What process was used to request this assistance?					

sufficient to justify the model’s continuation? How does demand change over time as WAHIT establishes itself?	4.3 How many times have you requested technical assistance from WAHIT?					
	4.4 What sort of support did WAHIT provide on those occasions?					
	4.5 How easy was it to get access to WAHIT’s technical assistance? (Probe: What facilitated/hindered having access to WAHIT TA?)					
	4.6 Would [COUNTRY]’s government be willing to pay for the type of TA received from WAHIT?					
	4.7 What options does the government have available to make that payment possible? (Probe: What constraints would the government face to use them? WAHO dues, pay for service, for example? What would facilitate using these options?)					
5. Whom do MOH officials trust and prefer to address HIS technical challenges to? Does the introduction of WAHIT affect these preferences?	5.1 To what extent did you get the support you expected?					
	5.2 What aspects of the technical assistance provided by WAHIT need to be maintained in the future?					
	5.3 What aspects of the technical assistance WAHIT model need improvement?					
	5.4 How likely are you to request WAHIT’s technical assistance in the future? (Probe: What kinds of issues would they address?)					
	5.5 What makes WAHIT technical assistance attractive? (Probe: How does WAHIT compare to other digital HIS technical assistance providers?)					
6. How do relevant stakeholders outside MOH perceive WAHIT and this model?	5.6 How likely are you to recommend WAHIT to other institutions/countries? Why?					
	6.1 How does the WAHIT model compare to other digital HIS technical assistance options?					
	6.2 What aspects should a technical assistance model to digitize HIS include to respond to country’s needs?					
	6.3 The way it is conceptualized now, how likely is WAHIT to succeed?					
7. How is/isn’t WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?	6.4 (IF NOT) What changes are needed in the WAHIT model to make it succeed?					
	7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? What can be done for WAHIT for be more effective in identifying needs? And in satisfying those needs?					
8. What are WAHIT’s operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?	8.1 What are the challenges or potential challenges in obtaining technical assistance from WAHIT?					
	8.2 What can be done to improve WAHIT’s responsiveness to client’s needs? (Examples may include a streamlined response to client’s request, appropriateness of the TA solutions proposed, etc.)					
9. How relevant to the level of awareness and demand is WAHO’s oversight of WAHIT?	9.1 How useful is it for WAHIT to be placed within WAHO? (Probe: What makes this arrangement appropriate?)					
	9.2 What modifications are needed in this arrangement for the technical assistance model to be (more) effective?					

10. Is this partnership model (USAID, Palladium, WAHO) effective?	10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa?					
	10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO?					
	10.3 What are the facilitators and barriers to provide TA through WAHIT?					
	10.4 What aspects of the WAHO/USAID/ Palladium partnership should remain in the future? Which ones need to be modified? Why?					
	10.5 What would make the services provided through WAHIT sustainable within WAHO?					
	10.6 What modifications in the WAHO/USAID/ Palladium partnership are required for sustained TA services to support digitalization of HISs in West Africa?					

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Annex 3 – Instruments Used

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FORMATIVE KEY INFORMANT INTERVIEWS: QUESTIONNAIRE FOR THE MINISTRY OF HEALTH OFFICIALS

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: Baseline Midline Endline

Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

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GREETING: (Introduction and Oral Informed Consent) [BASELINE/MIDLINE/ENDLINE]¹⁶

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informant interviews (KIIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, and I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

Your participation in this discussion is completely voluntary. You may choose to refuse to participate or not answer some questions or stop the interview any time. If you choose not to participate, there will be no negative consequences. You will not be receiving any payment or allowances for your participation.

Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

¹⁶ Indicates the phase in which the question should be asked. From here onwards, referred to as **[B/M/E]**.
B=Baseline, **M**=Midline, **E**= Endline

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1: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

1.1 What is your professional background — your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

1.2 What is your current role at [respondent's organization, e.g., USAID]? **[B]**

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2. Health Information System (HIS) Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

2.3 What health information data sources do you consult to make public health decisions? **[B/M/E]**

Probe: Is it facility related? Surveillance related?

2.4 What type of information are you seeking in these data sources? **[B/M/E]**

Probe: Are you interested in facility-related data? Are you interested in disease surveillance data? In both?

2.5 How useful are these sources to satisfy your information needs? Why? **[B/M/E]**

Probe: Is that the case for facility-related data? And for disease surveillance data?

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2.6 Are these sources digitized? **[B/M/E]**

Probe: Are the facility data digitized? Are the surveillance data digitized?

2.7 What are the main challenges facing digital HIS in [COUNTRY], if any? **[B/M/E]**

2.8. What activities and/or plans does the government/MOH have to overcome these challenges? **[B/M/E]**

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3. WAHIT: Awareness and Need

3.1 Where should the government first turn to get technical assistance to address these challenges? **[B/M/E]**

3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? **[B/M/E]**

Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?

3.3 Have you heard of WAHIT? If so, what role are they playing? **[B/M/E]**
(IF NO, PROVIDE A BRIEF EXPLANATION AND PROCEED WITH THE INTERVIEW)

3.4 What makes WAHIT relevant to provide technical assistance to support digital HIS? **[B/M/E]**

3.5 What aspects of HIS are likely to be improved through WAHIT support? **[B/M/E]**

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Probe: Anything else? Examples may include improved quality of data, reduced reporting delays, digital reporting.

3.6 Could this assistance be provided by other technical assistance mechanisms, in-country or external? **[B/M/E]**

3.7 What would make/makes WAHIT involvement an option? **[B/M/E]**

3.8 What services would WAHIT have to offer to make it a viable technical assistance option? **[B/M/E]**

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4. WAHIT: Demand and Reaction to Services Provided

4.1 Has the MOH requested WAHIT technical assistance? **[M/E]**
(IF NO, JUMP TO QUESTION 5)

4.2 What process was used to request this technical assistance? **[M/E]**

4.3 How many times have you requested technical assistance from WAHIT? **[M/E]**

4.4 What sort of support did WAHIT provide on those occasions? **[M/E]**

4.5 How easy was it to get access to WAHIT's technical assistance? **[M/E]**

Probe: What facilitated/hindered having access to WAHIT's TA?

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4.6 Would [COUNTRY]'s government be willing to pay for the type of technical assistance received from WAHIT? **[M/E]**

4.7 What options does the government have available to make that payment possible? **[M/E]**

Probe: What constraints would the government have to use them? WAHO dues, pay for services, for example. What would facilitate using these options?

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5. WAHIT: Expectations and Preferences

5.1. To what extent did you get the support you expected? [M/E]

5.2. What aspects of the technical assistance provided by WAHIT need to be maintained in the future? [M/E]

5.3 What aspects of the technical assistance WAHIT model need improvement? [M/E]

5.4 How likely are you to request WAHIT's technical assistance in the future? [M/E]
Probe: What kind of issues would they address?

5.5. What makes WAHIT technical assistance attractive? [M/E]
Probe: How does WAHIT compare to other digital HIS technical assistance providers?

5.6 How likely are you to recommend WAHIT to other institutions/countries? Why? [M/E]

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PROTOCOL

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6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?

[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**

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7. Client Needs: Improving WAHIT TA

7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? **[B/M/E]**

Probe: What can be done for WAHIT to be more effective in identifying needs? And in satisfying those needs?

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8. WAHIT: Operational Effectiveness

8.1 What are the challenges or potential challenges in obtaining technical assistance from WAHIT? **[B/M/E]**

8.2. What can be done to improve WAHIT's responsiveness to client's needs? **[B/M/E]**
(Examples may include a streamlined response to client requests, appropriateness of the TA solutions proposed, etc.)

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9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

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10. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future? Which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

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10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS: QUESTIONNAIRE FOR THE IMPLEMENTING PARTNERS (IPs)

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: Baseline Midline Endline

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Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent) [BASELINE/MIDLINE/ENDLINE]¹⁷

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informant interviews (KIIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, and I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

Your participation in this discussion is completely voluntary. You may choose to refuse to participate or not answer some questions or stop the interview any time. If you choose not to participate, there will be no negative consequences. You will not be receiving any payment or allowances for your participation.

Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

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B=Baseline, **M**=Midline, **E**= Endline

PROTOCOL

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BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

1.1 What is your professional background — your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

1.2 What is your current role at [respondent's organization e.g. USAID]? **[B]**

1.3 Have you worked in or are responsible for other countries in the region? What thematic areas and sectors? **[B]**

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2. Health Information System (HIS) Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

2.3 What health information data sources do you consult to make public health decisions? **[B/M/E]**

Probe: Is it facility-related? Disease-surveillance related? Both?

2.4 What type of information are you seeking in these data sources? **[B/M/E]**

Probe: Are you interested in facility-related data? Are you interested in disease surveillance data? In both?

2.5 How useful are these sources to satisfy your information needs? Why? **[B/M/E]**

Probe: Is that the case for facility-related data? And for disease surveillance data?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

2.6 Are these sources digitized? **[B/M/E]**

Probe: Are the facility data digitized? Are the surveillance data digitized?

2.7 What are the main challenges facing digital HIS in [COUNTRY], if any? **[B/M/E]**

2.8. What activities and/or plans does the government/MOH have to overcome these challenges? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

3. WAHIT: Awareness and Need

3.1 Where should the government first turn to get technical assistance to address these challenges? **[B/M/E]**

3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? **[B/M/E]**

Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?

3.3 Have you heard of WAHIT? If so, what role are they playing? **[B/M/E]**
(IF NO, PROVIDE A BRIEF DESCRIPTION AND PROCEED WITH THE INTERVIEW)

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?

[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**
(IF YES, SKIP TO Q. 7.1)

6.4. What changes are needed in the WAHIT model to make it succeed? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

7. Client Needs: Improving WAHIT TA

7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? **[M/E]**

Probe: What can be done for WAHIT to be more effective in identifying needs? And in satisfying those needs?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

8. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

9. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS: **QUESTIONNAIRE FOR WAHO OFFICIALS**

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: Baseline Midline Endline

Respondent Profile:

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent) [BASELINE/MIDLINE/ENDLINE]¹⁸

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informant interviews (KIIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, and I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

Your participation in this discussion is completely voluntary. You may choose to refuse to participate or not answer some questions or stop the interview any time. If you choose not to participate, there will be no negative consequences. You will not be receiving any payment or allowances for your participation.

Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

¹⁸ Indicates the phase in which the question should be asked. From here onwards, referred to as **[B/M/E]**.
B=Baseline, **M**=Midline, **E**= Endline

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

1: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

1.1 What is your professional background — your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

1.2 What is your current role at [respondent's organization, e.g., WAHO]? **[B]**

2. Health Information System (HIS)

Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?

[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**

6.4 If not, what changes are needed in the WAHIT model to make it succeed?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

8. WAHIT: Operational Effectiveness

8.1 What are the challenges or potential challenges in obtaining technical assistance from WAHIT? **[B/M/E]**

8.2. What can be done to improve WAHIT's responsiveness to client's needs? **[B/M/E]**
(Examples may include a streamlined response to client requests, appropriateness of the TA solutions proposed, etc.)

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? [B/M/E]

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? [B/M/E]

10. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? [B/M/E]

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? [B/M/E]

10.3 What are the facilitators and barriers to provide TA through WAHIT? [B/M/E]

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS: QUESTIONNAIRE FOR WAHIT/PALLADIUM AND USAID OFFICIALS

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ **Location:** _____

Time Start: _____

Name of Interviewer:

Circle: **Baseline** **Midline** **Endline**

Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent) [BASELINE/MIDLINE/ENDLINE]¹⁹

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informant interviews (KIIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, and I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

Your participation in this discussion is completely voluntary. You may choose to refuse to participate or not answer some questions or stop the interview any time. If you choose not to participate, there will be no negative consequences. You will not be receiving any payment or allowances for your participation.

Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

¹⁹ Indicates the phase in which the question should be asked. From here onwards, referred to as **[B/M/E]**.
B=Baseline, **M**=Midline, **E**= Endline

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

1: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

1.1 What is your professional background — your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

1.2 What is your current role at [respondent's organization, e.g., Palladium]? **[B]**

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options? **[B/M/E]**

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6.4 If not, what changes are needed in the WAHIT model to make it succeed?

8. WAHIT: Operational Effectiveness

8.1 What are the challenges or potential challenges in obtaining technical assistance from WAHIT? **[B/M/E]**

8.2. What can be done to improve WAHIT's responsiveness to client's needs? **[B/M/E]**
(Examples may include a streamlined response to client requests, appropriateness of the TA solutions proposed, etc.)

9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**
Probe: What makes this arrangement appropriate?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS:

QUESTIONNAIRE FOR THE IMPLEMENTING PARTNERS (IPs)

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: **Baseline** **Midline** **Endline**

Respondent Profile:

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent)
[BASELINE/MIDLINE/ENDLINE]²⁰

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informants interviews (KIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

Your participation in this discussion is completely voluntary. You may choose to refuse to participate or not answer some questions or stop the interview any time. If you chose not to participate, there will be no negative consequences. You will not be receiving any payment or allowances for your participation.

Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

²⁰ Indicates the phase in which the question should be asked. From here onwards, referred to as **[B/M/E]**.

B=Baseline, **M**=Midline, **E**= Endline

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

I: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

I.1 What is your professional background - your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

I.2 What is your current role at [respondent's organization e.g. USAID]? **[B]**

I.3 Have you worked in or are responsible for other countries in the region? What thematic areas and sectors? **[B]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

2. Health Information System (HIS)

Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

2.3 What health information data sources do you consult to make public health decisions? **[B/M/E]**

Probe: Is it facility-related? Disease-surveillance related? Both?

2.4 What type of information are you seeking in these data sources? **[B/M/E]**

Probe: Are you interested in facility-related data? Are you interested in disease surveillance data? In both?

2.5 How useful are these sources to satisfy your information needs? Why? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Probe: Is that the case for facility-related data? And for disease surveillance data?

2.6 Are these sources digitized? **[B/M/E]**

Probe: Are the facility data digitized? Are the surveillance data digitized?

2.7 What are the main challenges facing digital HIS in [COUNTRY], if any? **[B/M/E]**

2.8. What activities and/or plans does the government/MOH have to overcome these challenges? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

3. WAHIT: Awareness and Need

3.1 Where should the government first turn to get technical assistance to address these challenges? **[B/M/E]**

3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? **[B/M/E]**

Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?

3.3 Have you heard of WAHIT? If so, what role are they playing? **[B/M/E]**
(IF NO, END THE INTERVIEW)

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?
[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**
(IF YES, SKIP TO Q. 7.1)

6.4. What changes are needed in the WAHIT model to make it succeed? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

7. Client Needs: Improving WAHIT TA

7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? **[M/E]**

Probe: What can be done for WAHIT to be more effective in identifying needs? And in satisfying those needs?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS:

QUESTIONNAIRE FOR THE IMPLEMENTING PARTNERS (IPs)

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: Baseline Midline Endline

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent)
[BASELINE/MIDLINE/ENDLINE]²¹

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

I work for IBTCI contracted by USAID West Africa to conduct an operations research study on digitized information systems in West Africa. We are conducting in-person key informants interviews (KIs) with stakeholders to get an understanding of your knowledge, perceptions, and potential/actual use of digitized health information systems.

If you agree to the interview, you and I will talk about the issues, I will take notes. This interview will take approximately one hour depending upon your availability and interest.

The information you will provide will remain confidential, and your name will not be mentioned in any report that we prepare.

We might include quotes to emphasize a point which is illustrative of a trend in responses or is particularly noteworthy but they will not be linked to you directly or even the organization or location where you work. If you do not wish to have anything you mention quoted, please let us know now.

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Do you have any objection to participating in this interview, or do you have any questions before you can decide? You are also very welcome to stop me to ask questions during the interview. Thank you very much.

Are you willing to be interviewed? Yes/No

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? Yes/No

²¹ Indicates the phase in which the question should be asked. From here onwards, referred to as **[B/M/E]**.

B=Baseline, **M**=Midline, **E**= Endline

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

I: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

I.1 What is your professional background - your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

I.2 What is your current role at [respondent's organization e.g. USAID]? **[B]**

I.3 Have you worked in or are responsible for other countries in the region? What thematic areas and sectors? **[B]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

2. Health Information System (HIS)

Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

2.3 What health information data sources do you consult to make public health decisions? **[B/M/E]**

Probe: Is it facility-related? Disease-surveillance related? Both?

2.4 What type of information are you seeking in these data sources? **[B/M/E]**

Probe: Are you interested in facility-related data? Are you interested in disease surveillance data? In both?

2.5 How useful are these sources to satisfy your information needs? Why? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Probe: Is that the case for facility-related data? And for disease surveillance data?

2.6 Are these sources digitized? **[B/M/E]**

Probe: Are the facility data digitized? Are the surveillance data digitized?

2.7 What are the main challenges facing digital HIS in [COUNTRY], if any? **[B/M/E]**

2.8. What activities and/or plans does the government/MOH have to overcome these challenges? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

3. WAHIT: Awareness and Need

3.1 Where should the government first turn to get technical assistance to address these challenges? **[B/M/E]**

3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? **[B/M/E]**

Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?

3.3 Have you heard of WAHIT? If so, what role are they playing? **[B/M/E]**
(IF NO, END THE INTERVIEW)

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?
[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**
(IF YES, SKIP TO Q. 7.1)

6.4. What changes are needed in the WAHIT model to make it succeed? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

7. Client Needs: Improving WAHIT TA

7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? **[M/E]**

Probe: What can be done for WAHIT to be more effective in identifying needs? And in satisfying those needs?

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

10. Partnership: Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

I0.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS:

QUESTIONNAIRE FOR THE MINISTRY OF HEALTH OFFICIALS

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer: _____

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

Circle: **Baseline** **Midline** **Endline**

Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

PROTOCOL

USAID WAHIT/Lab Ebola Prospective Operations Research

GREETING: (Introduction and Oral Informed Consent)
[BASELINE/MIDLINE/ENDLINE]²²

Good morning/Good afternoon/Good evening: My name is _____, [where applicable]

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Are you willing to be interviewed? **Yes/No**

I would like to tape record the interview so that we can be sure that we captured your views correctly and facilitate transcription, but that is not essential.

May I record the interview? **Yes/No**

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B=Baseline, **M**=Midline, **E**= Endline

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I: BACKGROUND: Respondent's Profile

RI 1: To begin, let us talk about you first.

I.1 What is your professional background - your training and your professional experience? **[B]**

Probe for level (degrees) and disciplines.

Probe: Any prior work on emergencies/disasters?

I.2 What is your current role at [respondent's organization e.g. USAID]? **[B]**

PROTOCOL

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2. Health Information System (HIS)

Expertise and Use

2.1 What training, if any, have you received on Health Information Systems? **[B/M/E]**

2.2 What training, if any, have you received in digital disease surveillance and reporting? **[B/M/E]**

2.3 What health information data sources do you consult to make public health decisions? **[B/M/E]**

Probe: Is it facility related? Surveillance related?

2.4 What type of information are you seeking in these data sources? **[B/M/E]**

Probe: Are you interested in facility-related data? Are you interested in disease surveillance data? In both?

2.5 How useful are these sources to satisfy your information needs? Why? **[B/M/E]**

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Probe: Is that the case for facility-related data? And for disease surveillance data?

2.6 Are these sources digitized? **[B/M/E]**

Probe: Are the facility data digitized? Are the surveillance data digitized?

2.7 What are the main challenges facing digital HIS in [COUNTRY], if any? **[B/M/E]**

2.8. What activities and/or plans does the government/MOH have to overcome these challenges? **[B/M/E]**

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3. WAHIT: Awareness and Need

3.1 Where should the government first turn to get technical assistance to address these challenges? **[B/M/E]**

3.2 Which external or local organizations are/will be supporting the MOH to make those digital HIS improvements? **[B/M/E]**

Probe: What mechanisms are available to get that assistance? What role does WAHO play in that regard?

3.3 Have you heard of WAHIT? If so, what role are they playing? **[B/M/E]**
(IF NO, END THE INTERVIEW)

3.4 What makes WAHIT relevant to provide technical assistance to support digital HIS? **[B/M/E]**

3.5 What aspects of HIS are likely to be improved through WAHIT support? **[B/M/E]**

Probe: Anything else? Examples may include: improved quality of data, reduced reporting delays, digital reporting.

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3.6 Could this assistance be provided by other technical assistance mechanisms, in country or external? **[B/M/E]**

3.7 What would make/makes WAHIT involvement an option? **[B/M/E]**

3.8 What services would WAHIT have to offer to make it a viable technical assistance option? **[B/M/E]**

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4. WAHIT: Demand and Reaction to Services Provided

4.1 Has the MOH requested WAHIT technical assistance? **[M/E]**
(IF NO, END THE INTERVIEW)

4.2 What process was used to request this technical assistance? **[M/E]**

4.3 How many times have you requested technical assistance from WAHIT? **[M/E]**

4.4 What sort of support did WAHIT provide on those occasions? **[M/E]**

4.5 How easy was it to get access to WAHIT's technical assistance? **[M/E]**

Probe: What facilitated/hindered having access to WAHIT's TA?

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4.6 Would [COUNTRY]'s government be willing to pay for the type of technical assistance received from WAHIT? **[M/E]**

4.7 What options does the government have available to make that payment possible?

[M/E]

Probe: What constraints would the government have to use them? WAHO dues, pay for services, for example. What would facilitate using these options?

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5. WAHIT : Expectations and Preferences

5.1. To what extent did you get the support you expected? **[M/E]**

5.2. What aspects of the technical assistance provided by WAHIT need to be maintained in the future? **[M/E]**

5.3 What aspects of the technical assistance WAHIT model need improvement? **[M/E]**

5.4 How likely are you to request WAHIT's technical assistance in the future? **[M/E]**

Probe: What kind of issues would they address?

5.5. What makes WAHIT technical assistance attractive? **[M/E]**

Probe: How does WAHIT compare to other digital HIS technical assistance providers?

5.6 How likely are you to recommend WAHIT to other institutions/countries? Why? **[M/E]**

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6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options?
[B/M/E]

6.2. What aspects should a technical assistance model to digitize HIS should include to respond to countries' needs? **[B/M/E]**

6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**

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7. Client Needs: Improving WAHIT TA

7.1 To what extent does the technical assistance provided address the issues that the government is facing regarding a digital HIS? **[B/M/E]**

Probe: What can be done for WAHIT to be more effective in identifying needs? And in satisfying those needs?

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8. WAHIT: Operational Effectiveness

8.1 What are the challenges or potential challenges in obtaining technical assistance from WAHIT? **[B/M/E]**

8.2. What can be done to improve WAHIT's responsiveness to client's needs? **[B/M/E]**
(Examples may include a streamlined response to client requests, appropriateness of the TA solutions proposed, etc.)

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9. WAHO's Oversight of WAHIT

9.1 How useful is it for WAHIT to be placed within WAHO? **[B/M/E]**

Probe: What makes this arrangement appropriate?

9.2. What modifications are needed in this arrangement for the technical assistance model to be (more) effective? **[B/M/E]**

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10. Partnership : Advantages and Challenges

10.1 What are the advantages of the partnership between WAHO/USAID/Palladium to support digital HISs in West Africa? **[B/M/E]**

10.2 What are the challenges governments and WAHO face given that WAHIT is embedded in WAHO? **[B/M/E]**

10.3 What are the facilitators and barriers to provide TA through WAHIT? **[B/M/E]**

10.4 What aspects of the WAHO/USAID/Palladium partnership should remain in the future, which ones need to be modified? Why? **[B/M/E]**

10.5 What would make the services provided through WAHIT sustainable within WAHO? **[B/M/E]**

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10.6 What modifications in the partnership WAHO/USAID/Palladium are required for sustained TA services to support digitalization of HISs in West Africa? **[B/M/E]**

Thank you very much for your time and insights.

End: Record the time: _____

WAHIT Prospective Operations Research

FORMATIVE KEY INFORMANT INTERVIEWS:

QUESTIONNAIRE FOR WAHIT/PALLADIUM AND USAID OFFICIALS

BACKGROUND & INFORMED CONSENT

Date: _____

Country: _____ Location: _____

Time Start: _____

Name of Interviewer:

Circle: Baseline Midline Endline

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Respondent Profile:

Name	Title/Organization	Contact information (email/telephone)	Sex

NB: This instrument has different modules depending on the person interviewed. There are questions which are common to all study participants but many are different.

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Probe: Any prior work on emergencies/disasters?

I.2 What is your current role at [respondent's organization e.g. Palladium]? **[B]**

6. Comparing WAHIT

6.1. How does the WAHIT model compare to other digital HIS technical assistance options? **[B/M/E]**

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6.3. The way that it is conceptualized now, how likely is WAHIT to succeed? **[B/M/E]**

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6.4 If not, what changes are needed in the WAHIT model to make it succeed?

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WAHIT Prospective Operations Research

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End: Record the time: _____

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FROM THE AMERICAN PEOPLE

WEST AFRICA

USAID/West Africa Evidence for Development

GPO-I- 00-05- 00032-00

USAID Global Development Lab Ebola Team

Protocol for

Prospective Operations Research

Guinea, Sierra Leone & Ghana

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**USAID/West Africa
Evidence for Development
GPO-I- 00-05- 00032-00**

**PROTOCOL FOR WAHIT PROSPECTIVE
OPERATIONS RESEARCH**

April 2017

International Business and Technical Consultants, Inc. (IBTCI)

DISCLAIMER

The content of this report are the sole responsibility of International Business and Technical Consultants, Inc. (IBTCI) and does not necessarily reflect the views of USAID or the United States Government.

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ACRONYMS

CDC	Centers for Disease Control and Prevention
CoE	Center of Excellence
DHIS	District Health Information Software
E4D	Evidence for Development
ECOWAS	Economic Community of West Africa States
EVD	Ebola Virus Disease
HIS	Health Information System
HMIS	Health Management Information System
HP+	Health Policy Plus
IBTCI	International Business & Technical Consultants Incorporated
IR	Intermediate Results
KI	Key Informant
KII	Key Informant Interview
M&E	Monitoring and Evaluation
MOH	Ministry of Health
NHMIS	National Health Management Information Systems
OR	Operations Research
POR	Prospective Operations Research
RMNCH	Reproductive, Maternal, Newborn and Child Health

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SME	Subject Matter Expert
SOP	Standard Operating Procedure
SOW	Statement of Work
UNICEF	United Nations International Children's Emergency Fund
UN	United Nations
USAID	United States Agency for International Development
USAID/WA	USAID West Africa
WAHIT	West African Health Informatics Team
WAHO	West African Health Organization
WHO	World Health Organization

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PROJECT SUMMARY

Evidence for Development (E4D) will conduct a Prospective Operations Research (POR) in three West African countries (Guinea, Sierra Leone, and Ghana). This POR aims to assess *trends* in awareness of, demand for, and satisfaction with West African Health Informatics Team (WAHIT) and its services. The target audiences for the POR are the United States Agency for International Development (USAID) including the Africa Bureau, the Lab Ebola Team, and the West Africa Regional Mission; the West Africa Health Organization (WAHO); the Ministries of Health (MOH) in the four countries; Palladium (HP+), their donors and local partners in health and in other sectors using the Health Information System (HIS).

This is a “prospective” study that will employ a quasi-experimental prospective design. It will be implemented in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and one non-Ebola affected (*non-intervention*) country (Ghana). The study will draw on prospective qualitative data using primary data sources. It will be implemented between April and December 2017 (with the flexibility to continue into 2018, depending on progress if WAHIT project implementation). Findings from the study will provide important information regarding WAHIT and its role in the targeted countries.

I. BACKGROUND

I.1 Description of WAHIT

The health information system (HIS) is a foundational piece of health infrastructure. A strong HIS provides reliable data to policy makers (governments, development partners, service providers, and communities) to target health interventions, allocate resources, and to effectively respond to disease outbreaks. A properly functioning HIS ensures that vital information gets into the right hands when needed, enabling policy makers, health managers, and individual health care providers to make informed choices about everything from patient care to national budgets. However, in West Africa, HISs are weak and face several challenges, including poor governance and accountability. The HISs are under-utilized and incomplete as they pertain to information on health service availability, infection control options, case notification, geographic spread, relevant animal health data.

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The 2013-2015 Ebola outbreak in West Africa exposed severe weaknesses in HISs in the region. The outbreak went undetected by the regional and global community for months, infecting nearly 28,000 individuals and claiming the lives of more than 11,000 people. Local responders lacked critical information needed to monitor and manage the situation comprehensively and in real-time, such as case notification, transmission rates, geographic spread, and health service availability. If this information had been readily available, large-scale human and economic losses could have been avoided. Furthermore, as Ebola erupted across West Africa, a weak communications infrastructure and lack of a two-way real-time disease data collection and analysis hampered the ability of health care workers to respond to the crisis.

Against this backdrop, national governments, regional institutions and international organizations aim to set up a strong HIS across the West Africa region. During the 2015 Annual Meeting of National HIS Managers in Accra hosted by the West Africa Health Organization (WAHO) and USAID, all 15 members of the Economic Community of West African States (ECOWAS) recognized lack of technical capacity to maintain and adapt critical digital health information platforms as a contributing factor for challenges faced during the national response to Ebola in West Africa. They also affirmed that reliance on external support jeopardizes the successful implementation of digital tools for health, and can be a critical impediment to further progress in public health systems development.

Some of the lessons learned were that there is a duplication of health information systems and a need for effective systems with timely access to accurate information to enable timely response; there are insufficient human and technical capacities; and there is a need for *skilled health informatics professionals within the region to support and maintain HIS*.

Therefore, USAID, in partnership with other key players opted to support WAHO in building a West Africa Health Informatics on Team (WAHIT) that will serve to fill this gap by acting as a regional resource to provide technical support to national MOH for HIS improvements. The *overall goal* of WAHIT is to provide HIS technical leadership and support to the MOHs within ECOWAS with an initial focus on the Ebola-affected countries of Guinea, and Sierra Leone.

The first year of the activity will serve as a proof-of-concept for a sustainable WAHIT as part of a broader regional Centre of Excellence (CoE) for health informatics. The activity started on September 2016 (with the pilot phase ending in December, 2017), with the flexibility to continue into 2018. WAHO is implementing the WAHIT project with the support of USAID.

WAHIT has *three main objectives*:

- 1) To make immediate improvements in national and regional HIS that will help strengthen public health systems;
- 2) To build local software engineering capacity to support long-term sustainability of HIS investments in the region; and

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- 3) To support a strategic recommendation from the 2012 ECOWAS Health Policy and Strategies plan to establish a regional HIS Centre of Excellence.

To achieve these objectives, WAHIT is designed to assist the local Ministries of Health in addressing technical gaps/issues in the digital HIS.²⁵

Illustrative *activities* include:

- Integrating a separate District Health Information Software (DHIS2) instance for malaria reporting into the national DHIS2 instance;
- Creating Reproductive, Maternal, Newborn and Child Health (RMNCH) dashboard based on existing indicators;
- Integrating the newly approved Tuberculosis Form into the national DHIS2 instance;
- Automating the reporting of the National Health Management Information System (NHMIS) data into WAHO's DHIS2 instance;
- Continued training of District Monitoring and Evaluation (M&E) officers for data entry and reporting quality.

Within the *first year of operation*, WAHIT is tasked with:

- Establishing standard operating procedures (SOP) for providing support to MOHs;
- Providing technical support to improve national HIS platforms based on criteria agreed upon by WAHO and USAID;
- Documenting and establishing best practices for regional digital health support to MOHs. Technical assistance provided by this team will also seek to accelerate HIS interoperability in the region; and;
- Conducting a viability assessment to inform the business case for whether a fuller and long-term regional WAHIT should be launched with a sustainable model for recruitment and training, and whether/ how to link to the proposed WAHO Centre of Excellence. If so, the assessment will also identify significant factors influencing program success and recommendations for implementation and sustainability.

²⁵ All West African countries have adopted DHIS2; they are at different maturity levels.

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I.2 Description of E4D's Role

IBTCI holds a five-year contract from USAID/West Africa for the Evidence for Development (E4D) activity. The official start date of the award was January 29, 2015. This activity is implemented across six francophone countries: Burkina Faso, Cameroon, Ivory Coast, Mauritania, Niger, and Togo. USAID/West Africa is a regional mission located in Accra, Ghana.

USAID tasked West Africa Evidence for Development (USAID/WA-E4D) activity to conduct a Prospective Operations Research (POR) to identify trends in awareness of, demand for, and satisfaction with WAHIT and its services

II. STUDY GOALS AND OBJECTIVES

The **main goal** of the E4D's Prospective Operations Research (POR) is to assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in three Ebola-affected (*intervention*) countries (Guinea, Liberia and Sierra Leone) and one non-Ebola affected (*non-intervention*) country (Ghana).

The study has the following *primary objectives*:

- 1) To identify *factors* influencing Ministry of Health's decisions to engage WAHIT technical support (versus the support of alternative service providers);
- 2) To assess satisfaction with WAHIT services, and to generate data to inform program adaptation; and
- 3) To identify *challenges* and *barriers* faced by health stakeholders (health workers, MOH officials) in adopting and managing the WAHIT model.

III. METHODOLOGY

III.1 Research Questions

The Research Team will review and revise the following research questions (which will then inform the data collection tools):

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- 1) How aware are relevant MOH personnel of WAHIT? How does awareness change over the project life cycle?
- 2) What level of demand is there for WAHIT services? Is demand sufficient to justify the model's continuation? How does demand change over time as WAHIT establishes?
- 3) Who do MOH officials trust and prefer to address HIS technical challenges? Does the introduction of WAHIT affect these preferences?
- 4) How do relevant stakeholders outside MOHs perceive WAHIT and this model?
- 5) How is/isn't WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?
- 6) What are WAHIT's operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?
- 7) How relevant is WAHO's oversight of WAHIT to the level of awareness and demand?

III.2 Study Design

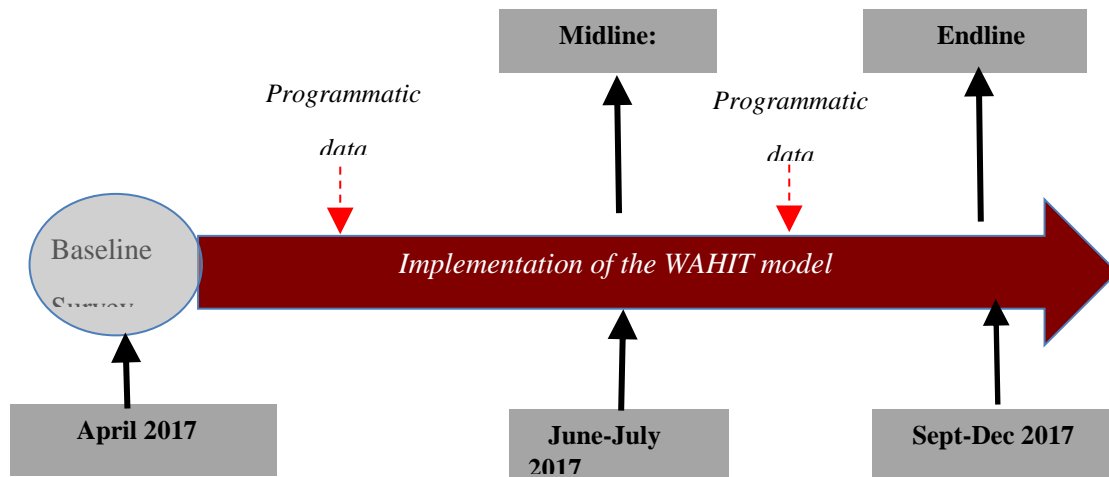
The study that will employ a quasi-experimental prospective design. It will be implemented in three Ebola-affected (*intervention*) countries (Guinea, Liberia and Sierra Leone) and one non-Ebola affected (*non-intervention*) country (Ghana). The study consists of regular assessment of the *acceptance*, *success* and *challenges* of the WAHIT model through the implementation of the activity and uses a mix of quantitative and qualitative data. The ***primary data are qualitative*** in nature (in-depth analysis of Key Informant Interviews/KIIs using content analysis/thematic analysis) and will be collected quarterly (baseline/midline/endline). ***Secondary data*** will include ***quantitative information*** related to the financial, practical use, and other costs and benefits of the WAHIT model, as well as of other alternative models of HIS technical support (as compared to the WAHIT model).

The process includes three major phases and two secondary sub-activities. Figure 1 presents the study timeline.

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Figure 1: Timeline of the WAHIT Intervention and Prospective Operations Research



The study will start with a baseline survey followed by a midline and an endline survey. As such, there will be three main data collection activities (including data analysis and report writing). This prospective study will also include two updates of programmatic data between the baseline and the midline and between the midline and the endline (Figure 1).

The team will conduct the baseline before the commencement of WAHIT services or at the earlier stage of implementation (April 2017), with the understanding that scoping visits have already been completed in Guinea and Sierra Leone²⁶. The baseline survey will assess factors, perception and intention to use the WAHIT model.

The midline and endline surveys will allow for an assessment of the changes that occurred since the baseline survey. The study will apply the full spectrum of the Technology Acceptance Model²⁷ (Figure 2), adapted for Technical Assistance, as well as content analysis/thematic analysis.

²⁶ The final report will emphasize that that Guinea and Sierra Leone are expected, as a result, to have a greater awareness of WAHIT at baseline.

²⁷ Holden R J, Karsh B. (2010) The Technology Acceptance Model: its past and its future in healthcare. *Journal of Biomedical Informatics*; 159-189.

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III.3 Sampling Strategy

The study will draw a purposeful sample of up to 45 key informants (KIs) in the three countries (on average 15 per country) among the range of the national-level stakeholders, including MOH officials, donor agencies, WAHO and WAHIT staff, Palladium personnel, and other stakeholders. The study questions will require that perspectives from the MOH/other clients, digital HIS implementing partners (IPs), and the WAHO focal points. The Research Team will ensure that the same respondents are interviewed over the life of the study, if available and continue to be play the same role as detected at the outset of the study. However, in case of absence/change, they will interview the designated KIs within the same institution. The Research Team will propose the selection and replacement methods in case of absence in the inception report. The final list of the key informants will be finalized in consultations with the Lab Ebola team, Palladium and WAHO (Annex B: List of KIs by country).

III.4 Data Sources

The study includes qualitative and quantitative data from primary and secondary sources. **Primary data** will be collected through qualitative in-depth key informant interviews to be carried out in the four countries. The KIIs will use semi-structured questionnaires administered to about 60 key informants (15 in each country). As mentioned above, we will triangulate the primary data with **secondary data** that includes **quantitative information** related to the performance, financial, practical use, and other costs and benefits of the WAHIT model, as well as of other alternative models of HIS technical support.

The data from Palladium's internal Monitoring and Evaluation (M&E) will complement the data collected from the E4D baseline/midline/endline surveys.

III.5 Data Collection

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The study's primary data collection is expected to be aligned with WAHIT's inception to the end of the first phase of the pilot. E4D is, therefore, planning to start the data collection around the beginning of WAHIT's activities (April 2017).

The baseline and endline surveys will be in country, via face-to-face interviews that will be conducted by the E4D team, including consultants, to ensure solid baseline and endline data. The midline surveys will be done by Skype or phone.

E4D has set up a *data collection team* (Research Team) composed by:

- A Team Leader/Researcher & Study Coordinator (with Ebola Experience);
- A Regional Health Information System Subject Matter Expert;
- A Regional Health Economist Subject Matter Expert.

The Team Leader/Researcher and the regional HIS/Subject Matter expert will be hired at the beginning of the OR while the Health Economist will join the team later on, after 6 months of WAHIT's implementation. The Research Team will have skills and experience in leading and conducting research studies, especially on HIS.

Data Collection Instruments

The Research Team will finalize the *primary data collection tools* to allow for capturing the following information (Annex A):

- Is WAHIT an effective model?
- Attractiveness of model in providing technical assistance in digital HIS;
- The level of WAHIT assistance (need/request may be different in different countries and situations;
- Satisfaction with technical assistance provided by WAHIT;
- Preferences for technical assistance (including external and local);
- Demand for continued services (will countries pay additional WAHO dues in order to sustain WAHIT?);
- Quality of WAHIT's technical assistance;
- Is this partnership model effective (USAID, Palladium, WAHO)?

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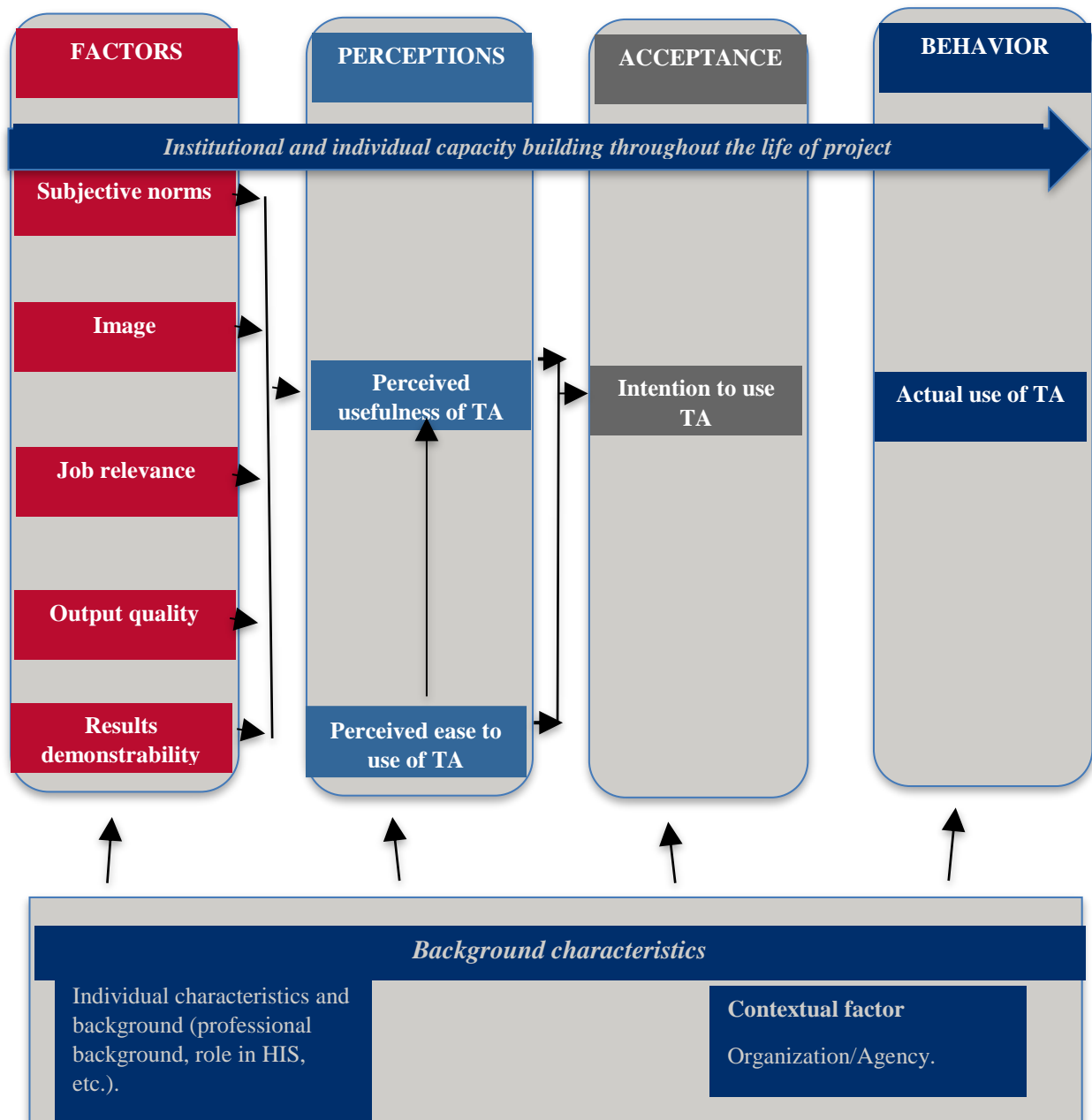
Primary data will be triangulated by *secondary quantitative data* (see III.4 above).

The study will apply an adjusted version of the Technology Acceptance Model (Figure 2), adapted for Technical Assistance, as well as content analysis/thematic analysis. This model assumes that what attitudes, job relevance and output quality drive people's intentions to use technical assistance, and considers the influential role of individual and contextual factors.

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Figure 2. The Adjusted Technical Assistance Acceptance Model



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Adapted from (Holden & Karsh, 2010)²⁸

III.6 Research Design Matrix

The table below shows the Research Design Matrix, including research questions, objectives, suggested data sources and data collection methods, and the data analysis methods.

²⁸ Holden R J, Karsh B. (2010) The Technology Acceptance Model: its past and its future in healthcare. *Journal of Biomedical Informatics*; 159-189.

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Research Questions	Objectives	Suggested Data Sources	Suggested Data Collection Methods	Data Analysis Methods
1. How aware are relevant MOH personnel of WAHIT? How does awareness change over the project life cycle?	<ul style="list-style-type: none"> Describe trends in awareness of, demand for, and satisfaction with WAHIT and services provided. 	<ul style="list-style-type: none"> Key Informant Interviews 	<ul style="list-style-type: none"> Interview Guide 	Content and thematic analyses/TA Acceptance Model.
2. What level of demand is there for WAHIT services? Is demand sufficient to justify the model's continuation? How does demand change over time as WAHIT establishes?	<ul style="list-style-type: none"> Describe trends in awareness of, demand for, and satisfaction with WAHIT and services provided. 	<ul style="list-style-type: none"> Key Informant Interviews WAHIT programmatic data from records 	<ul style="list-style-type: none"> Interview Guide Reports 	Content and thematic analyses/TA Acceptance Model. Trends analysis
3. Who do MOH officials trust and prefer to address HIS technical challenges? Does the introduction of WAHIT affect these preferences?	<ul style="list-style-type: none"> Describe trends in awareness of, demand for, and satisfaction with WAHIT and services provided; 	<ul style="list-style-type: none"> Key Informant Interviews 	<ul style="list-style-type: none"> Interview Guide 	Content and thematic analyses/TA Acceptance Model.

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4. How do relevant stakeholders outside MOHs perceive WAHIT and this model?	<ul style="list-style-type: none"> Describe trends in awareness of, demand for, and satisfaction with WAHIT and services provided; 	<ul style="list-style-type: none"> Key Informant Interviews 	<ul style="list-style-type: none"> Interview Guide 	Content and thematic analyses/TA Acceptance Model.
5. How is/isn't WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?	<ul style="list-style-type: none"> Identifying challenges and barriers faced by health stakeholders (health workers, MOH officials) in adopting and managing the WAHIT model. Identify factors influencing MOH decisions to engage WAHIT technical support (versus the support of alternative service providers). 	<ul style="list-style-type: none"> Key Informant Interviews WAHIT programmatic data from records 	<ul style="list-style-type: none"> Interview Guide Reports 	Content and thematic analyses/TA Acceptance Model. Trends analysis

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6. What are WAHIT's operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?	<ul style="list-style-type: none"> Identifying challenges and barriers faced by health stakeholders (health workers, MOH officials) in adopting and managing the WAHIT model Mapping the HIS activities in Guinea, and Sierra Leone 	<ul style="list-style-type: none"> Key Informant Interviews Programmatic data, organization 	<ul style="list-style-type: none"> Interview Guide Reports 	<p>Content and thematic analyses/TA Acceptance Model.</p> <p>Trends analysis</p>
7. How relevant is WAHO's oversight of WAHIT to the level of awareness and demand?	<ul style="list-style-type: none"> Describe trends in awareness of, demand for, and satisfaction with WAHIT and services provided; Communication between WAHO and WAHIT, decision process 	<ul style="list-style-type: none"> Key Informant Interviews Programmatic data 	<ul style="list-style-type: none"> Interview Guide Reports 	<p>Content and thematic analyses/TA Acceptance Model.</p>

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III.7 Data Quality

Data quality must meet USAID's five standards: Validity, Integrity, Precision, Reliability and Timeliness. The Research Team will employ strategies that ensure these standards are met at each step of the study (inception report, data collection tools, data analysis and drafting report).

All data collected by the Research Team will be provided in machine-readable, non-proprietary formats as required by USAID's Open Data policy (see ADS 579). The data should be organized and fully documented for use by those not fully familiar with the project or the research. USAID will retain ownership of the qualitative datasets.

III.8 Data Analysis

Data analysis will rely on trend analyses for quantitative indicators and content analysis for qualitative indicators. The qualitative data will be analysed using content and thematic analyses and will employ the adapted Technical Assistance Acceptance Model. The qualitative analysis will be as specific and concrete as possible (e.g. X% of MOH clients interviewed now prefer WAHIT over available alternatives), as well as will count adjectives or certain words that are used to describe WAHIT (e.g., 'pleasant' or "nice" when describing WAHIT). Qualitative data will be triangulated with secondary quantitative data/available reports to reach final conclusions and recommendations.

Regarding data transcription, E4D will test the option of using technology that records the interview and automatically transcribes the data generating a file that can be used for analysis. E4D has identified Dragon as a software option that does precisely speech-text transcription: <http://www.nuance.com/for-business/by-product/dragon/dragon-for-the-pc/dragon-professional-individual/index.htm>. E4D will find out if it works well with both English and French.

The reader may find in Attachment D an illustrative graphic showing how findings of this POR could be presented.

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III.9 Limitations of the Study

Interviewer and respondent bias is a common drawback of qualitative studies. During the course of an in-depth interview, the interviewer might instill his/her own interpretation and biases when asking the question and especially when probing the respondent. Similarly, the stakeholders we interview will have their own agendas and perceived advantages and disadvantages of answering a question in a particular way. This will vary from one respondent to the next and is indeed a limitation of qualitative designs. To mitigate this constraint, we will have interviewers who speak the local language. The Research Team will suggest ways to mitigate this limitation in the inception report.

The Research Team will also rely on programmatic (e.g. Palladium's M&E data, Palladium's client satisfaction ratings) and any other relevant data (information related to the financial, practical use, and other costs and benefits of the WAHIT model, as well as of other alternative models of HIS technical support) to triangulate the KII findings. This is based on the assumptions that this information will be available and reliable, some of which might not be accurate.

III.10 Ethical Considerations

The ethical integrity of E4D's work is a high priority. Every measure will be taken to protect the rights of human subjects who participate in the study and to adhere to the ethical principles of respect, beneficence, and justice as defined by The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research.²⁹ In order to achieve this, the Research Team will obtain verbal and written voluntary consent from all participants of the KIIs. Written notes, transcripts, and questionnaires will remain within the Research Team at all times. In-depth interviews (KIIs) will be conducted in a private setting to dissuade others from hearing the interviews.

²⁹ National Institutes for Health. (1979) *Regulations and Ethical Guidelines: The Belmont Report Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, Retrieved December 7, 2012, from: The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research:

<http://www.biola.edu/offices/clear/media/downloads/BelmontReport2.pdf>

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IV. APPENDICES

Annex A: KI Question Matrix.

Annex B: List of KIs by Country

Annex C: Research Schedule

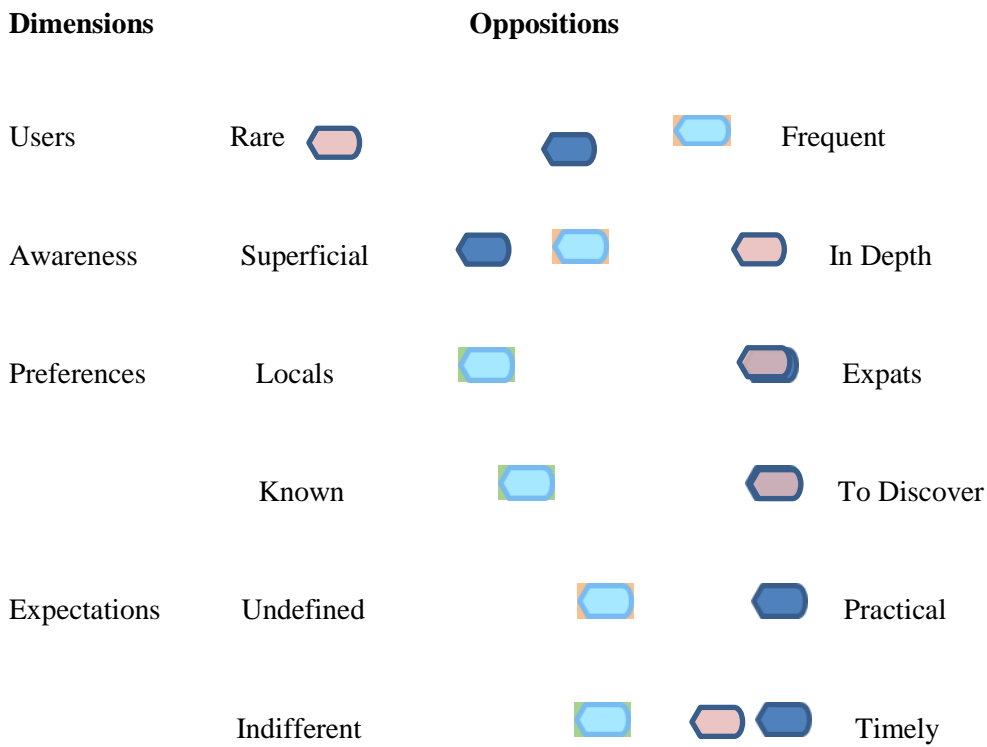
Annex D: Illustrative Graphic Representing Findings of Study

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Annex D: Illustrative Graphic Representing Findings of Study

WAHIT Hypothetical Infographic After Analysis



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Partnership

Skeptical



Hopeful

Critical



Supportive

Legend



IP



MOH



WAHO



PROSPECTIVE OPERATIONS RESEARCH On WAHIT

Guinea, Sierra Leone and Ghana

USAID/West Africa-Evidence for
Development Project

PRESENTATION OUTLINE

- I. Overview of WAHIT**
- II. Overview of the Prospective Operations Research**
- III. Methodology, Sampling and Timeline**
- IV. Key Findings**
- V. Recommendations from the Baseline Study**
- VI. Next Steps: Midline and Endline Review**
- VII. Q&A**

OVERVIEW: West Africa Health Informatics Team (WAHIT)

West Africa Health Informatics Team (WAHIT)

■ Period of performance

September 2016 – December 2018

■ Objective

WAHIT was established to provide technical leadership and support in HIS for Ministries of Health in ECOWAS countries, with priority given to Ebola-affected countries: Guinea, Liberia and Sierra Leone.

Specific Objectives

WAHIT's specific objectives:

1. Set up a regional team of experts (software developers, business analyst, and team lead) to make immediate technical improvements in the national and regional digital HIS that will help strengthen public health systems.

2. Build local software developer capacity to support long-term sustainability of HIS investments in the region.

3. Support a strategic recommendation from the 2012 ECOWAS Health Policy and Strategic Plan to establish a regional HIS Center of Excellence (CoE).

Illustrative Activities

- Integrating a separate District Health Information Software (DHIS2) component for malaria reporting into the national DHIS2 platform
- Creating a Reproductive, Maternal, Newborn, and Child Health (RMNCH) dashboard based on existing indicators
- Integrating the newly approved Tuberculosis Form into the national DHIS2 platform
- Automating the reporting of the National Health Management Information System (NHMIS) data into WAHO's DHIS2 platform
- Continuing training of District Monitoring and Evaluation (M&E) officers for data entry and reporting quality

The first year of the activity is meant to serve as a proof-of-concept for a sustainable WAHIT as part of a broader regional CoE for health informatics.

OVERVIEW: PROSPECTIVE OPERATIONS RESEARCH (POR)

Main goal:

To assess *trends* in awareness of, demand for, and satisfaction with WAHIT and its services in two Ebola-affected (*intervention*) countries (Guinea and Sierra Leone) and one Ebola-unaffected (*nonintervention*) country (Ghana)

PROSPECTIVE OPERATIONS RESEARCH (Cont.)

Research Questions:

- How aware of WAHIT are relevant MOH personnel? How does awareness change over the project life cycle?
- What level of demand is there for WAHIT services? Is demand sufficient to justify the model's continuation? How will demand change over time as WAHIT establishes itself?
- Whom do MOH officials trust and prefer to address HIS technical challenges to? Does the introduction of WAHIT affect these preferences?
- How do relevant stakeholders outside MOHs perceive WAHIT and this model?

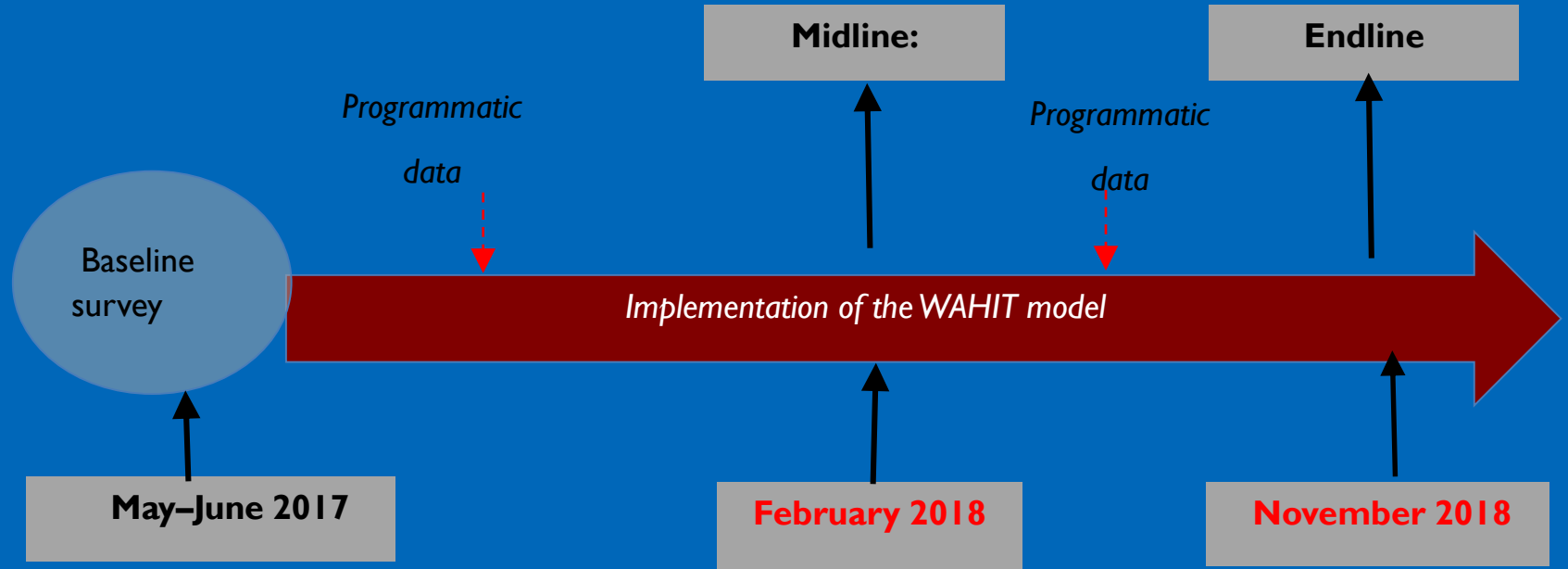
PROSPECTIVE OPERATIONS RESEARCH (Cont.)

Research Questions:

- How is/isn't WAHIT meeting the needs of MOH officials? What can WAHIT do to better identify and meet needs?
- What are WAHIT's operational strengths, weaknesses, and challenges? What can be done to improve operational effectiveness?
- How relevant to the level of awareness and demand is WAHO's oversight of WAHIT?
- Is the partnership set up for implementing WAHIT effective (WAHO, Palladium, and USAID)?

PROSPECTIVE OPERATIONS RESEARCH (POR): METHODOLOGY AND SAMPLING

PROSPECTIVE OPERATIONS RESEARCH: Methodology, Sampling and Timeline



PROSPECTIVE OPERATIONS RESEARCH: Methodology, Sampling and Timeline

The prospective operations research study used a quasi-experimental prospective design.

Data Sources:

Key Informants
Interviews (KIs)
using structured
Questionnaires

Profile of KIs:

Participants comprised Representatives of the partnership behind WAHIT (USAID, WAHO and Palladium) but also partners from the MOH, WHO, Unicef, CDC, IntraHealth, Measure Evaluation, CRS, EngenderHealth, RTI, etc.

In total 38 key informants were interviewed: 25 from two Ebola-affected countries, Guinea (n=16) and Sierra Leone (n=9), and 9 from Ghana and 4 from WAHIT and/or USAID.

Data collection:

The data were mainly collected through face-to-face interviews, and only in exceptional cases, the research team conducted interviews over the phone, via Skype or teleconferencing.

PROSPECTIVE OPERATIONS RESEARCH: Methodology, Sampling and Timeline

Data Analysis

Interviews were taped, transcribed, translated to English when needed, and analyzed using a thematic grid developed by randomly selecting three interviews from each country and identifying initial themes. Data were entered in Atlasti.8 and word clouds were created for two topics: the WAHIT model and WAHO's oversight of WAHIT.

PROSPECTIVE OPERATIONS RESEARCH: Methodology, Sampling and Timeline (Cont.)

Data Analysis

To complete the data analysis, the following actions were performed:

- Developing the grid by doing an initial identification of themes in three randomly selected interviews from each country
- Creating word clouds for two topics: the WAHIT model and WAHO's oversight of WAHIT
- Expanding the topics in the analysis grid as additional topics emerged
- Using verbatim remarks and having sentences as the unit of analysis
- Grouping results by key areas of interest
- Identifying different positions in relation to each important topic
- Summarizing each position and assessing its strength or degree of importance

PROSPECTIVE OPERATIONS RESEARCH (POR): KEY FINDINGS

PROSPECTIVE OPERATIONS RESEARCH: Findings (1/4)

Question 1:

In general, the awareness of WAHIT was limited. Only four of the 25 key informants interviewed in Sierra Leone and Guinea said that they had heard of WAHIT prior to the interview. This question was not addressed during the Ghana interviews because WAHIT does not plan to operate there during the first year of implementation.

Question 2:

Various donors and partners provide support to efforts carried out by the MOH both in Sierra Leone and Guinea to digitize different subcomponents of their health information system and integrate them under one single platform: DHIS2. The preference would be for future WAHIT TA efforts to be integrated with what is already being implemented.

PROSPECTIVE OPERATIONS RESEARCH: Findings (2/4)

Question 3:

It is not clear yet what type of support WAHIT may provide, and what further clarification will be needed. The possibility of providing menu-driven TA was raised for future WAHIT clients to know what to choose from. For some study participants, geographical proximity is a necessary but insufficient condition to accept further TA to digitize HIS.

Question 4:

A “fly in/fly out” technical assistance model would not be accepted by most study participants and may create more questions than provide answers. Remote technical assistance seemed as a new concept and should be reviewed from the perspective of how much skills transfer it allows.

PROSPECTIVE OPERATIONS RESEARCH: Findings (3/4)

Question 5:

The WAHIT operational strengths, weaknesses and challenges perceived by study participants may be grouped into two large categories: (1) the *modus operandi* for WAHIT's TA, and (2) what the content of the TA should be.

In terms of *modus operandi* of the TA, suggestions made by study participants may be organized around three major areas: (1) integrating efforts to strategies, work plans, and specific actions already occurring on the ground to avoid duplication and/or competition with other IPs; (2) transferring competency so MOH staff can resolve issues in the future as they arise; and (3) adopting an implementation strategy characterized by promptness, innovativeness, and supportiveness including follow-up measures as needed, coupled with including hardware options as required.

PROSPECTIVE OPERATIONS RESEARCH: Findings (4/4)

Question 6:

Many answers to this question were hypothetical because WAHIT TA is currently an abstract concept. Therefore, it was difficult for participants to speak about the implications of having WAHIT be part of WAHO or under WAHO's umbrella, based on concrete experience. Regardless, the approach is generally accepted because, institutional affiliation aside, study participants have a positive opinion on WAHO.

Question 7:

For study participants, it could be effective because different strengths offered by partners are put together in the context of the partnership: the Global Development Lab drives digital TA considerations; WAHO has regional presence and recognition; and Palladium has the technical expertise to satisfy country needs. Countries currently benefit from in-country TA with supporting partners on the ground. In addition, a regional hub would help reduce redundancies and duplication.

PROSPECTIVE OPERATIONS RESEARCH (POR): RECOMMENDATIONS

PROSPECTIVE OPERATIONS RESEARCH:

Recommendations (1/3)

1. Use multiple avenues to inform different stakeholders of what WAHIT is, what it can do, and how countries can tap into the technical assistance the team may provide. This could include meetings that WAHO has already scheduled in the coming months. Introductory visits to countries need to be complemented with other marketing activities, including presentations in already-scheduled meetings that bring together country representatives at the regional level in the next quarter. WAHO can also consider how to rely on the WAHO representatives in the targeted countries to further increase awareness on WAHIT's existence and role.

PROSPECTIVE OPERATIONS RESEARCH:

Recommendations (2/3)

2. Have WAHIT experts join regular meetings of technical working groups already operating in targeted countries as well as other existing platforms where other TA partners and government officials discuss issues to tackle and make strategic, tactical, and implementation decisions, and assign roles and responsibilities pertaining to health informatics.
3. As TA opportunities get identified, consider providing support at not only the central level, but also at the regional and even district level. Consideration may be given to pilot districts where support may be provided and serve as a training ground for additional district-level support.
4. Draft scopes of work may be developed between WAHIT experts and MOH officials prior to submission of official requests to WAHO for processing.

PROSPECTIVE OPERATIONS RESEARCH:

Recommendations (2/3)

5. Define opportunities and mechanisms to develop trust among TA recipients. Placing WAHIT within WAHO opens doors but does not guarantee trust and reliance on the WAHIT TA from the outset.
6. Once the technical area of support is identified, one way to organize the WAHIT TA is to start with a short-term TA visit on the ground, followed by intermittent visits as needed. Provide remote assistance to ensure smooth implementation of recommendations and technical know-how transfer.
7. Different perspectives need to be reconciled quickly and the differences in standard operating procedures between participating partnership organizations must be identified early in the process to anticipate solutions and avoid implementation delays.

PROSPECTIVE OPERATIONS RESEARCH (POR): NEXT STEPS

Next Steps (1/2)

- Complete approval of the Baseline Report.
- Present Key Findings to WAHO.
- Integrate comments/feedback and develop the French Version for the Presentation.
- Present findings to the MOH in Guinea and Sierra Leone.
- Present findings to other Stakeholders as the WAHIT team sees it relevant;

Next Steps (2/2)

- Prepare the Midline Assessment:
 - Slightly review the SOW and methodological approach to integrate changes and feedback;
 - Select and onboard local consultants in Sierra Leone and Guinea.
- Conduct the Midline assessment in February-March 2018.
- Present Findings.
- Coordinate with the WAHIT team and USAID/WA to make ready tools and materials for the Endline Assessment.

QUESTIONS AND ANSWERS